

Research article

urn:lsid:zoobank.org:pub:01616041-C40E-4076-98EF-1BB1ED0C9706

***Serratacosa*, a new genus of Lycosidae (Araneae) from the southern slopes of the Eastern Himalayas**Lu-Yu WANG¹, Xian-Jin PENG² & Zhi-Sheng ZHANG^{3,*}^{1,3}Key Laboratory of Eco-environments in Three Gorges Reservoir Region (Ministry of Education),
School of Life Sciences, Southwest University, Chongqing 400715, China.²College of Life Sciences, Hunan Normal University, Changsha 410081, Hunan, China.

*Corresponding author: zhangzs327@qq.com

¹Email: wangluyu1989@163.com²Email: xjpeng@126.com¹ <https://orcid.org/0000-0002-5250-3473>² <https://orcid.org/0000-0002-2614-3910>³ <https://orcid.org/0000-0002-9304-1789>¹urn:lsid:zoobank.org:author:6C219212-8F77-4037-949C-1F17B252BFCE²urn:lsid:zoobank.org:author:5CF67046-FAB4-43F1-AA72-ED2EB9741CD9³urn:lsid:zoobank.org:author:4BDFD343-89C8-4F2A-89CF-2693EA443189

Abstract. A new wolf spider genus, *Serratacosa* gen. nov., is erected based on the type and new species, *S. medogensis* gen. et sp. nov. and two newly combined species, *S. himalayensis* (Gravely, 1924) (from *Hogna* Simon, 1885) and *S. multidontata* (Qu, Peng & Yin, 2010) (from *Pardosa* C.L. Koch, 1847). All of them are from the southern slopes of the Eastern Himalayas. Descriptions of the new genera and species, and a redescription of *S. multidontata* are provided together with digital images, illustrations and a distribution map.

Key words. Wolf spider, new combination, new species, Tibet, taxonomy.

Wang L.-Y., Peng X.-J. & Zhang Z.-S. 2021. *Serratacosa*, a new genus of Lycosidae (Araneae) from the southern slopes of the Eastern Himalayas. *European Journal of Taxonomy* 762: 96–107. <https://doi.org/10.5852/ejt.2021.762.1455>

Introduction

The southern slopes of the Eastern Himalayas are one of the most important biodiversity hotspots worldwide (Myers *et al.* 2000), having high species richness and a high number of endemic species, such as the spider genera *Himalmartensus* Wang & Zhu, 2008 (Amaurobiidae Thorell, 1870) and *Himalcoelotes* Wang, 2002 (Agelenidae C.L. Koch, 1837), which are only known from this region.

The wolf spider family Lycosidae Sundevall, 1833 is the sixth most diverse spider group, comprised of 125 genera and 2430 valid species worldwide (World Spider Catalog 2021). Some well-revised genera have distinctive distributional regions, such as *Acantholycosa* Dahl, 1908 (revised by Marusik *et al.*

2004) found in Europe, Asia and North America; *Hippasa* Simon, 1885 (revised by Wang *et al.* 2015) found in Asia and Africa, *Ovia* Sankaran, Malamel & Sebastian, 2017 (revised by Sankaran, Malamel & Sebastian 2017 and Lu *et al.* 2018) found in China, Laos, Singapore and India. But many genera are still non-monophyletic and need to be further revised, such as *Arctosa* C. L. Koch, 1847 and *Pardosa* C. L. Koch, 1847 (Piacentini & Ramirez 2019).

Two lycosid species, *Hogna himalayensis* (Gravely, 1924) and *Pardosa multidontata* Qu, Peng & Yin, 2010, found on the southern slopes of the Eastern Himalayas, share similar characteristics, such as the strong, twisted, distal-end grooved terminal apophysis (sickle-shaped in the type species of *Hogna*, *H. radiata* (Latreille, 1817)) (Logunov 2020: 352, figs 19–23); simple and non-grooved in the type species of *Pardosa*, *P. alacris* (C. L. Koch, 1833) (Almquist 2005: 215, figs 214a–f), and the serrated median apophysis (unserrated in *H. radiata* and *P. alacris*) and inverted T-shaped epigynal septum (same as in *H. radiata* and *P. alacris*).

Here a new genus, *Serratacosa* gen. nov., is erected to accommodate these two species, *S. himalayensis* (Gravely, 1924) comb. nov. and *S. multidontata* (Qu, Peng & Yin, 2010) comb. nov., along with the type species of the new genus, *S. medogensis* gen. et sp. nov. from the same area of China (Medog of Tibet).

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 dissection. Female genitalia were cleared in 90% lactic acid. 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 given in millimeters.

Morphological terminology follows Framenau (2007).

Institutional abbreviations

SWUC = School of Life Sciences, Southwest University, Chongqing, China

HNU = College of Life Science, Hunan Normal University, Changsha, China

Abbreviations for morphological terms used in the text and figures

ALE = anterior lateral eye
AME = anterior median eye
PLE = posterior lateral eye
PME = posterior median eye
CO = copulatory opening
Co = conductor
DA = dorsal arm
Em = embolus
FD = fertilization duct
HS = head of spermatheca
MA = median apophysis
Se = septum
SS = stalk of spermatheca
St = subtegulum
TA = terminal apophysis
Te = tegulum

VA = ventral arm

Results

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Lycosidae Sundevall, 1833
Subfamily Lycosinae Sundevall, 1833

Serratacosa gen. nov.

urn:lsid:zoobank.org:act:DE9ED7B2-DB01-4C4B-8C29-6DE34846FFF7

Type species

Serratacosa medogensis gen. et sp. nov.

Diagnosis

This new genus shares similar characters with some Lycosinae genera, such as *Costacosa* Framenau & Leung, 2013 (male pedipalps with serrated median apophysis), *Hogna* Simon, 1885 and *Trochosa* C. L. Koch, 1847 (epigynes with inverted T-shaped septum). However, the new genus can be distinguished from all above mentioned genera by: median apophysis ventral surface with a semicircular protruding lobe, strongly sclerotized, dorsal surface with an oval sclerite (with keel-shaped ventral spur in *Costacosa*, whereas in *Hogna* and *Trochosa* oblique, with stout spur near base); terminal apophysis twisted, strongly grooved (sickle-shaped in *Costacosa*, *Hogna* and *Trochosa*); embolus long, sinuous (arc-shaped in *Costacosa*, *Hogna* and *Trochosa*) (Figs 1, 2A–B, 3C–F, 4A–B, 5C–F). Epigynal septum as long as wide (Figs 2C–D, 3G–H, 4C–D, 5G–H) (longer than wide in *Costacosa*, *Hogna* and *Trochosa*) (Almquist 2005; Framenau & Leung 2013; Logunov 2020).

Etymology

The generic name is derived from the Latin word ‘*serratus*’ (‘锯齿状的’ in Chinese), which means serrated, and the lycosid generic suffix ‘*-cosa*’; referring to the serrated anterior edge of the median apophysis; gender feminine.

Description

CEPHALOTHORAX. Carapace gray brown, with light brown longitudinal marking on mid-line, eye region black. Fovea longitudinal. Radial furrows distinct. Chelicerae brown, with three promarginal and three retromarginal teeth. Labium and endites yellow brown, longer than wide. Sternum yellow brown and scutellate, with sparse brown setae.

LEGS. Yellow-brown, with black pigmentation. Leg formula: 4123.

OPISTHOSOMA. Oval, yellowish-brown, with lanceolate cardiac mark on anterior half and with black irregular markings on posterior half. Venter of abdomen yellow-brown.

PEDIPALPS (Figs 1A, 2A–B, 3C–F, 4A–B, 5C–F). With slender and hooked embolus. Terminal apophysis twisted, strongly grooved. Median apophysis complex, serrated, with two arms: ventral arm earlobe-shaped and dorsal arm oval, with apical end. Conductor small, membranous.

EPIGYNE (Figs 2C–D, 3G–H, 4C–D, 5G–H). With wide, inverted T-like septum, spermathecal heads nearly spherical, with stalks short and curved. Fertilization ducts hook-like.

Composition

Three species: *Serratacosa medogensis* gen. et sp. nov., *S. himalayensis* (Gravely, 1924) comb. nov. and *S. multidontata* (Qu, Peng & Yin, 2010) comb. nov.

Distribution

China (Yunnan, Tibet), India (West Bengal, Assam) and Bhutan.

Remarks

The types of *Hogna himalayensis* were unavailable for our research, but it is clear from the descriptions and figures of Tikader & Malhotra (1980: 382, figs 255–257) and Buchar (1997: 14, figs 15–17), that the median apophysis is serrated and the epigynal septum inverted T-shaped.

Serratacosa medogensis gen. et sp. nov.

urn:lsid:zoobank.org:act:734E2179-3E8D-4E2A-9AB7-D3947CC7F01B

Figs 1–3, 6

Diagnosis

This new species most closely resembles *S. multidontata* (Qu, Peng & Yin, 2010) (Figs 4–5), but differs from the latter by the following characters. Lateral projection of the median apophysis with a blunt end,

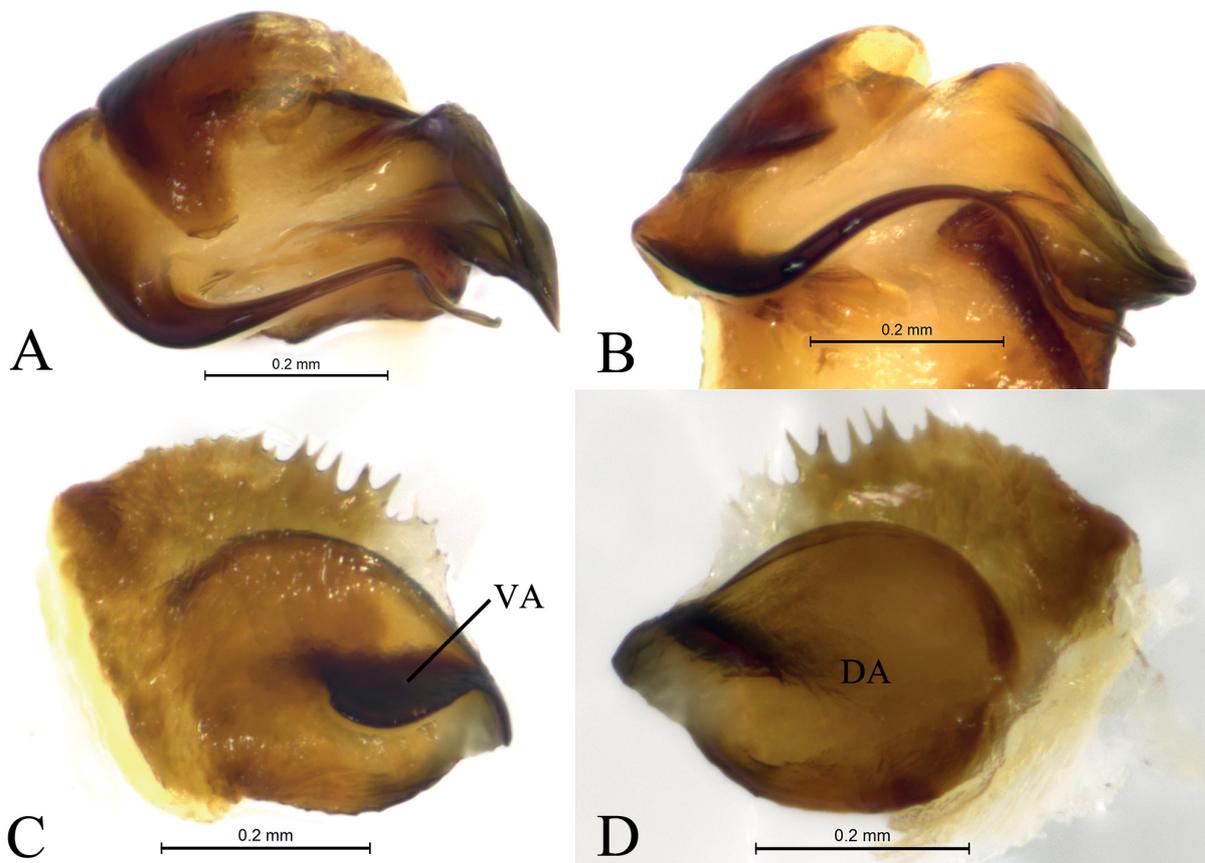


Fig. 1. *Serratacosa medogensis* gen. et sp. nov. **A.** Embolus and terminal apophysis, ventral view. **B.** Embolus and terminal apophysis, bottom view. **C.** Median apophysis, ventral view. **D.** Median apophysis, dorsal view.

slightly touching lateral edge of cymbium in the new species (Figs 1C–D, 2A–B, 3C–F), whereas distal end truncate, almost overlapping lateral edge of cymbium in ventral view in *S. multidontata* (Figs 4A–B, 5C–F). Septum wider than long and spermathecal heads spherical with fine spermathecal stalks in the new species (Figs 2C–D, 3G–H), whereas septum longer than wide and spermathecal heads oval with thick spermathecal stalks in *S. multidontata* (Figs 4C–D, 5G–H).

Etymology

The specific epithet refers to the type locality ‘Medog’ (‘墨脱’ in Chinese); noun in apposition.

Type material

Holotype

CHINA • ♂; Tibet, Medog County, Beibeng Township; 29°14.376' N, 95°10.675' E; alt. 894 m; 23 May 2019; L.Y. Wang, P. Liu, T. Yuan and H. Wang leg.; SWUC-T-LY-12-01.

Paratypes

CHINA • 6 ♂♂, 3 ♀♀; same collection data as for holotype; SWUC-T-LY-12-02 to 12-10 • 4 ♂♂, 3 ♀♀; Medog County; 29°19.470' N, 95°19.618' E; alt. 1116 m; 22 May 2019; L.Y. Wang, P. Liu, T. Yuan and H. Wang leg.; SWUC-T-LY-12-11 to 12-17 • 3 ♂♂, 2 ♀♀; Medog County, Medog Town, Yarang Village; 29°17.758' N, 95°16.827' E; alt. 761 m; 22 May 2019; L.Y. Wang, P. Liu, T. Yuan and H. Wang leg.; SWUC-T-LY-12-18 to 12-22 • 4 ♂♂, 1 ♀; Medog County, Beibeng Township; 29°14.866' N,

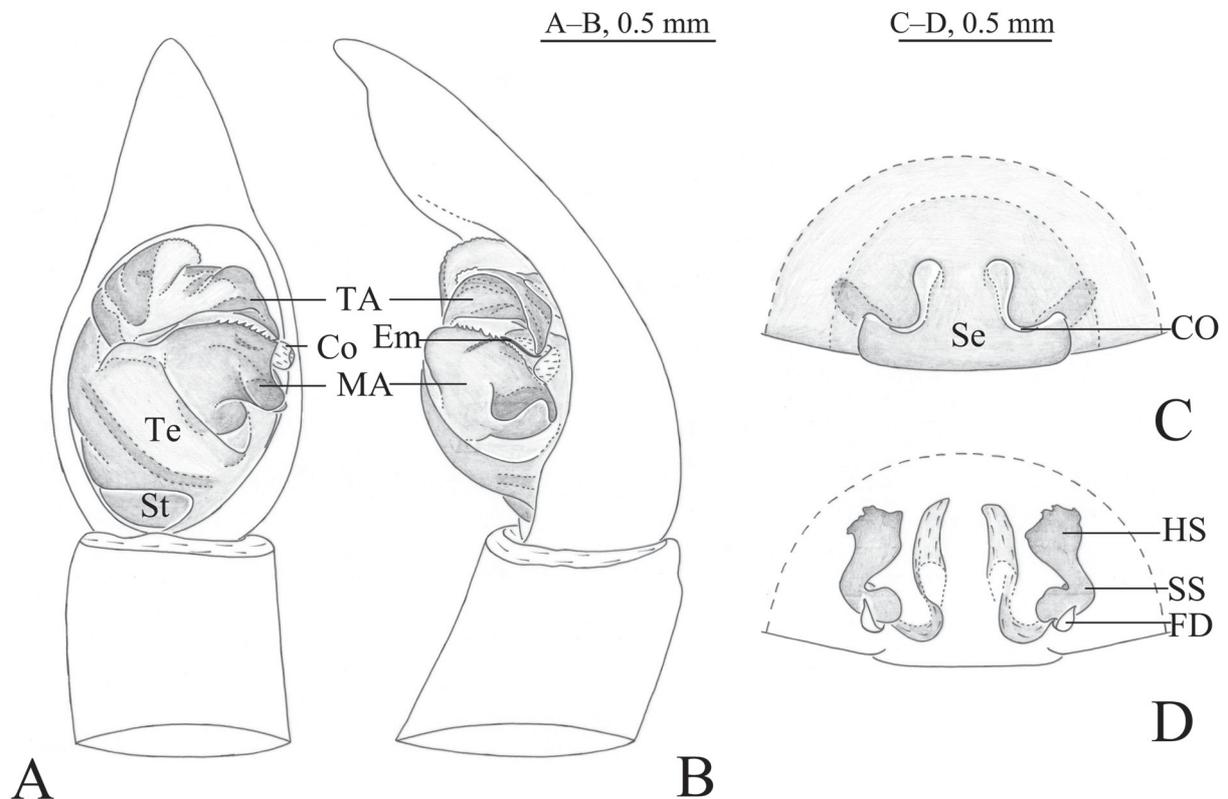


Fig. 2. *Serratacosa medogensis* gen. et sp. nov. **A–B.** Holotype, ♂ (SWUC-T-LY-12-01). **C–D.** Paratype, ♀ (SWUC-T-LY-12-08). **A.** Left pedipalp, ventral view. **B.** Left pedipalp, retrolateral view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view.

95°11.022' E; alt. 924 m; 23 May 2019; L.Y. Wang, P. Liu, T. Yuan and H. Wang leg; SWUC-T-LY-12-23 to 12-27 • 4 ♂♂, 1 ♀; Medog County; 29°19.470' N, 95°19.618' E; alt. 1116 m; 23 May 2019; L.Y. Wang, P. Liu, T. Yuan and H. Wang leg.; SWUC-T-LY-12-28 to 12-32 • 1 ♀; Medog County, Medog Town, Yarang Village; 29°17.758' N, 95°16.827' E; alt. 761 m; 28 Jun. 2018; L.Y. Wang, Z.S. Wu and Y.N. Mu leg.; SWUC-T-LY-12-33 • 4 ♀♀; Medog County, Beibeng Township; 29°14.376' N, 95°10.675' E; alt. 894 m; 28 Jun. 2018 L.Y. Wang, Z.S. Wu and Y.N. Mu leg.; SWUC-T-LY-12-34 to 12-37 • 1 ♀; Medog County; 29°19.470' N, 95°19.618' E; alt. 1116 m; 28 Jun. 2018; L.Y. Wang, Z.S. Wu and Y.N. Mu leg; SWUC-T-LY-12-38.

Description

Male (holotype, Fig. 3A)

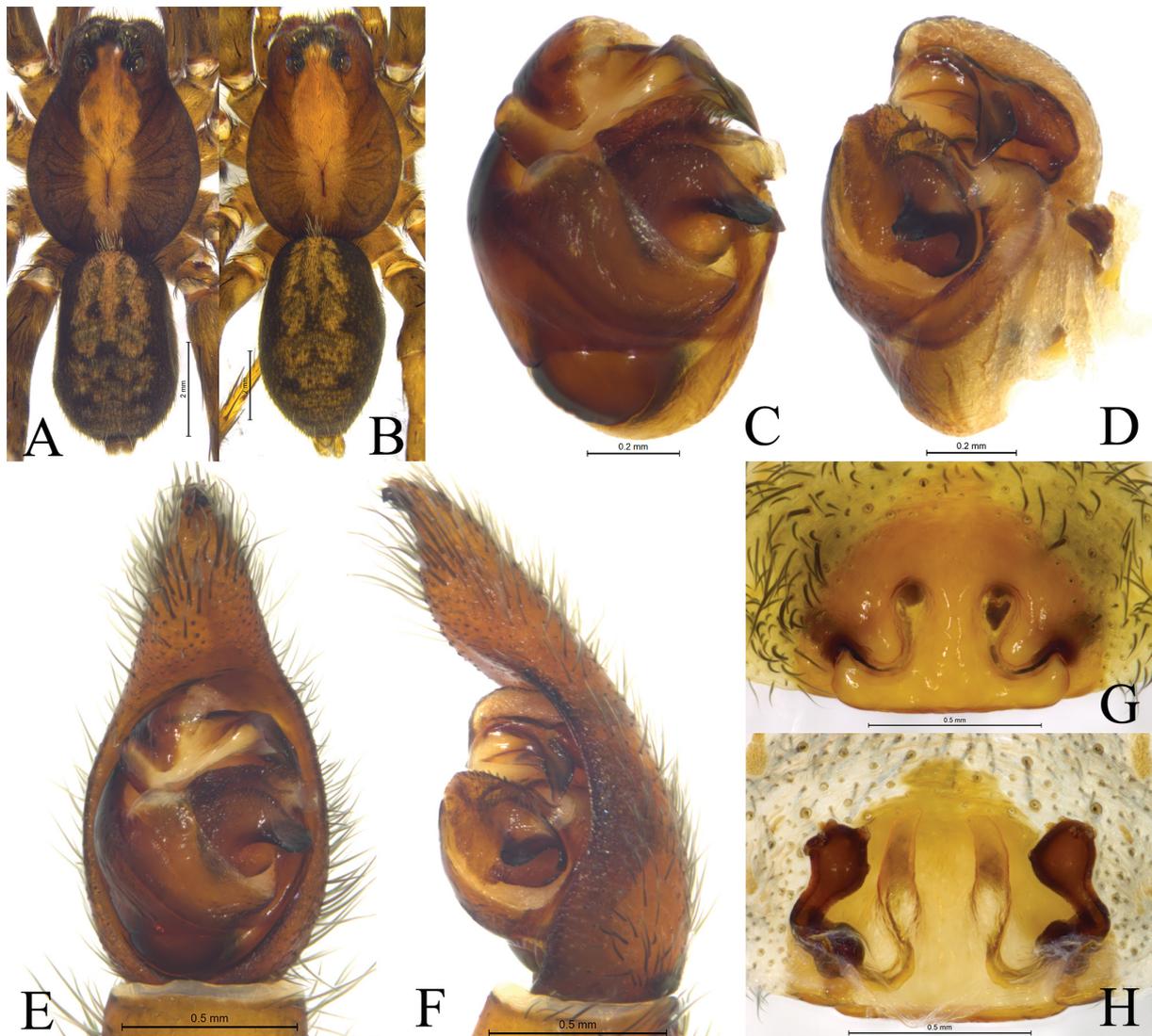


Fig. 3. *Serratacosa medogensis* gen. et sp. nov. **A, E–F.** Holotype, ♂ (SWUC-T-LY-12-01). **B.** Paratype, ♀ (SWUC-T-LY-12-08). **C–D.** Paratype, ♂ (SWUC-T-LY-12-02). **G–H.** Paratype, ♀ (SWUC-T-LY-12-08). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Left pedipalp, bulbus, ventral view. **D.** Left pedipalp, bulbus, retrolateral view. **E.** Left pedipalp, ventral view. **F.** Left pedipalp, retrolateral view. **G.** Epigyne, ventral view. **H.** Vulva, dorsal view.

MEASUREMENTS. Total length 9.03. Carapace 5.13 long, 3.69 wide; opisthosoma 4.09 long, 2.68 wide. Eye sizes and interdistances: AME = 0.21, ALE = 0.17, PME = 0.49, PLE = 0.39; AME–AME = 0.11, AME–ALE = 0.09, PME–PME = 0.32, PME–PLE = 0.35. Clypeus height 0.16.

LEG MEASUREMENTS. I = 13.35 (3.81, 4.33, 3.01, 2.20); II = 12.75 (3.55, 4.33, 2.95, 1.92); III = 11.82 (3.33, 3.65, 3.11, 1.73); IV = 16.98 (4.50, 4.84, 5.26, 2.38).

MALE PEDIPALP (Figs 1, 2A–B, 3C–F). Subtegulum distinct in ventral view, located baso-prolaterally. Embolus slender and slightly sinuous. Conductor small and membranous. Median apophysis serrated, ventral surface with semicircular protruding lobe, strongly sclerotized, dorsal surface with oval sclerite. Terminal apophysis strong twisted, distal end grooved.

Female (SWUC-T-LY-12-02, Fig. 3B)

MEASUREMENTS. Total length 12.36. Carapace 6.65 long, 4.49 wide; opisthosoma 6.06 long, 3.69 wide. Eye sizes and interdistances: AME = 0.28, ALE = 0.21, PME = 0.58, PLE = 0.48; AME–AME = 0.19, AME–ALE = 0.10, PME–PME = 0.43, PME–PLE = 0.44. Clypeus height 0.28.

LEG MEASUREMENTS. I = 14.82 (4.34, 4.88, 3.20, 2.40); II = 14.17 (4.06, 4.79, 3.14, 2.18); III = 13.57 (3.84, 4.22, 3.43, 2.08); IV = 19.17 (4.98, 6.01, 5.59, 2.59).

EPIGYNE (Figs 2C–D, 3G–H). Epigyne with inverted T-shaped septum, median part wider than long. Copulatory openings located on shoulders of septum. Spermathecal heads large and spherical, with several small buds. Spermathecal stalks short, curved. Fertilization ducts hook-like.

Distribution

China (Tibet, Medog County) (Fig. 6).

Serratacosa multidontata (Qu, Peng & Yin, 2010) comb. nov.
<http://zoobank.org/f5b258d3-c866-4d01-9324-1fb7bec017e4>
Figs 4–6

Pardosa multidontata Qu, Peng & Yin, 2010: 392, figs 5a–b, 11a–e (♂♀).

Diagnosis

This species resembles *S. medogensis* gen. et sp. nov. (Figs 1–3), but differs by having the distal end of the lateral projection of the median apophysis truncate, almost overlapping the lateral edge of the cymbium in this species (Figs 4A–B, 5C–F), whereas this end is blunt, slightly touching the lateral edge of the cymbium in ventral view in *S. medogensis* gen. et sp. nov. (Figs 1C–D, 2A–B, 3C–F). The septum longer than wide and the spermathecal heads are oval with thick spermathecal stalks in this species (Figs 4C–D, 5G–H), whereas the septum is wider than long and the spermathecal heads are spherical with fine spermathecal stalks in *S. medogensis* gen. et sp. nov. (Figs 2C–D, 3G–H)

Material examined

Holotype

China • ♂; Yunnan Province, Gongshan County, Dulongjiang Township, Qing Lang Dang; 27°41.418' N, 98°16.740' E; alt. 1309 m; 31 Aug. 2006; P. Hu leg.; HNU.

Paratypes

China • 1 ♂, 4 ♀♀; same collection data as for holotype; HNU.

Description

Male (holotype, Fig. 5A)

MEASUREMENTS. Total length 10.04. Carapace 5.25 long, 4.01 wide; opisthosoma 4.83 long, 3.16 wide. Eye sizes and interdistances: AME = 0.26, ALE = 0.18, PME = 0.56, PLE = 0.46; AME–AME = 0.13, AME–ALE = 0.11, PME–PME = 0.34, PME–PLE = 0.44. Clypeus height 0.14.

LEG MEASUREMENTS. I = 13.64 (3.63, 4.83, 3.02, 2.16); II = 12.71 (3.57, 4.10, 2.93, 2.11); III = 12.06 (3.25, 3.86, 3.16, 1.79); IV = 16.89 (4.34, 5.15, 5.12, 2.28).

MALE PEDIPALP (Figs 4A–B, 5C–F). Subtegulum distinct in ventral view, located baso-prolaterally. Embolus slender and slightly sinuous. Conductor small and membranous. Median apophysis serrated, ventral surface with semicircular protruding lobe, strongly sclerotized, dorsal surface with oval sclerite. Terminal apophysis strong, twisted, distal end grooved.

Female (Fig. 5B)

MEASUREMENTS. Total length 13.14. Carapace 6.60 long, 4.95 wide; opisthosoma 6.92 long, 5.11 wide. Eye sizes and interdistances: AME = 0.33, ALE = 0.23, PME = 0.64, PLE = 0.57; AME–AME = 0.18, AME–ALE = 0.15, PME–PME = 0.44, PME–PLE = 0.53. Clypeus height 0.31.

LEG MEASUREMENTS. I = 15.53 (4.54, 5.56, 3.08, 2.35); II = 13.61 (4.21, 4.16, 3.14, 2.10); III = 13.53 (3.80, 4.44, 3.28, 2.01); IV = 20.23 (5.12, 6.49, 5.58, 3.04).

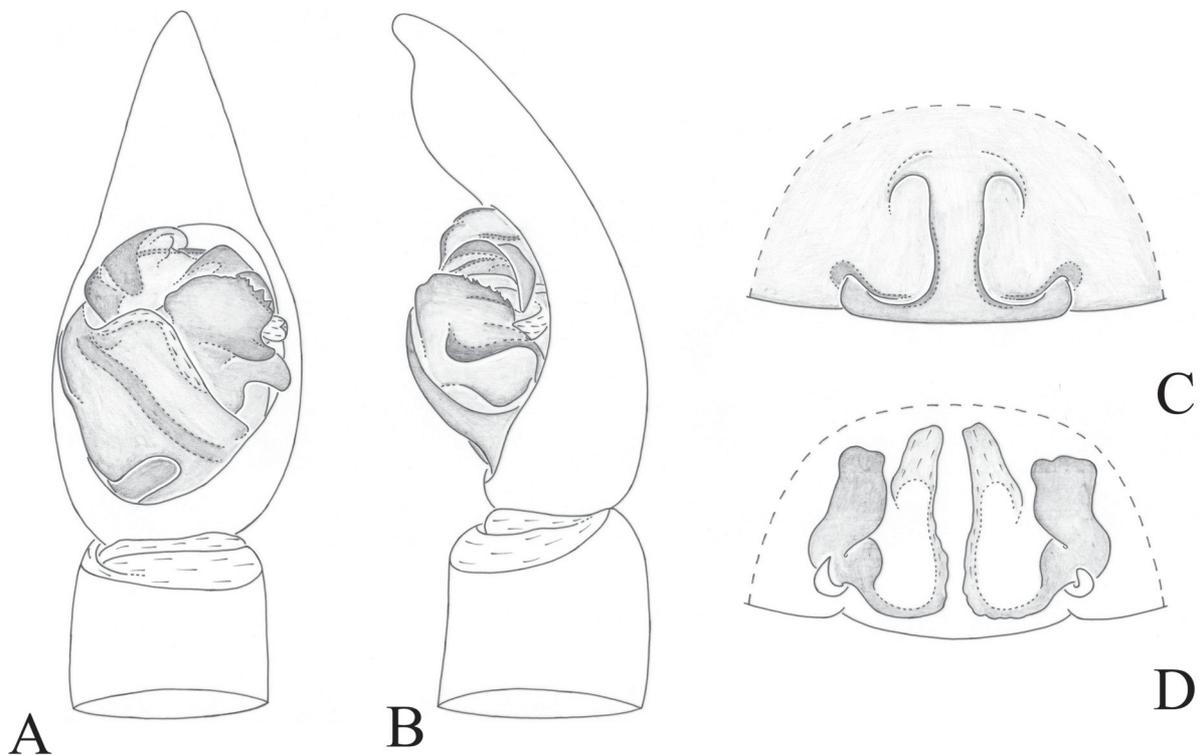


Fig. 4. *Serratacosa multidontata* (Qu, Peng & Yin, 2010) comb. nov. **A–B.** Paratype, ♂ (HNU). **C–D.** Paratype, ♀ (HNU). **A.** Left pedipalp, ventral view. **B.** Left pedipalp, retrolateral view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view.

EPIGYNE (Figs 4C–D, 5G–H). Epigyne with inverted T-shaped septum, median part wider than long. Copulatory openings located on shoulders of septum. Spermathecal heads oval. Spermathecal stalks thick, short and curved. Fertilization ducts hook-like.

Distribution

China (Yunnan) (Fig. 6).

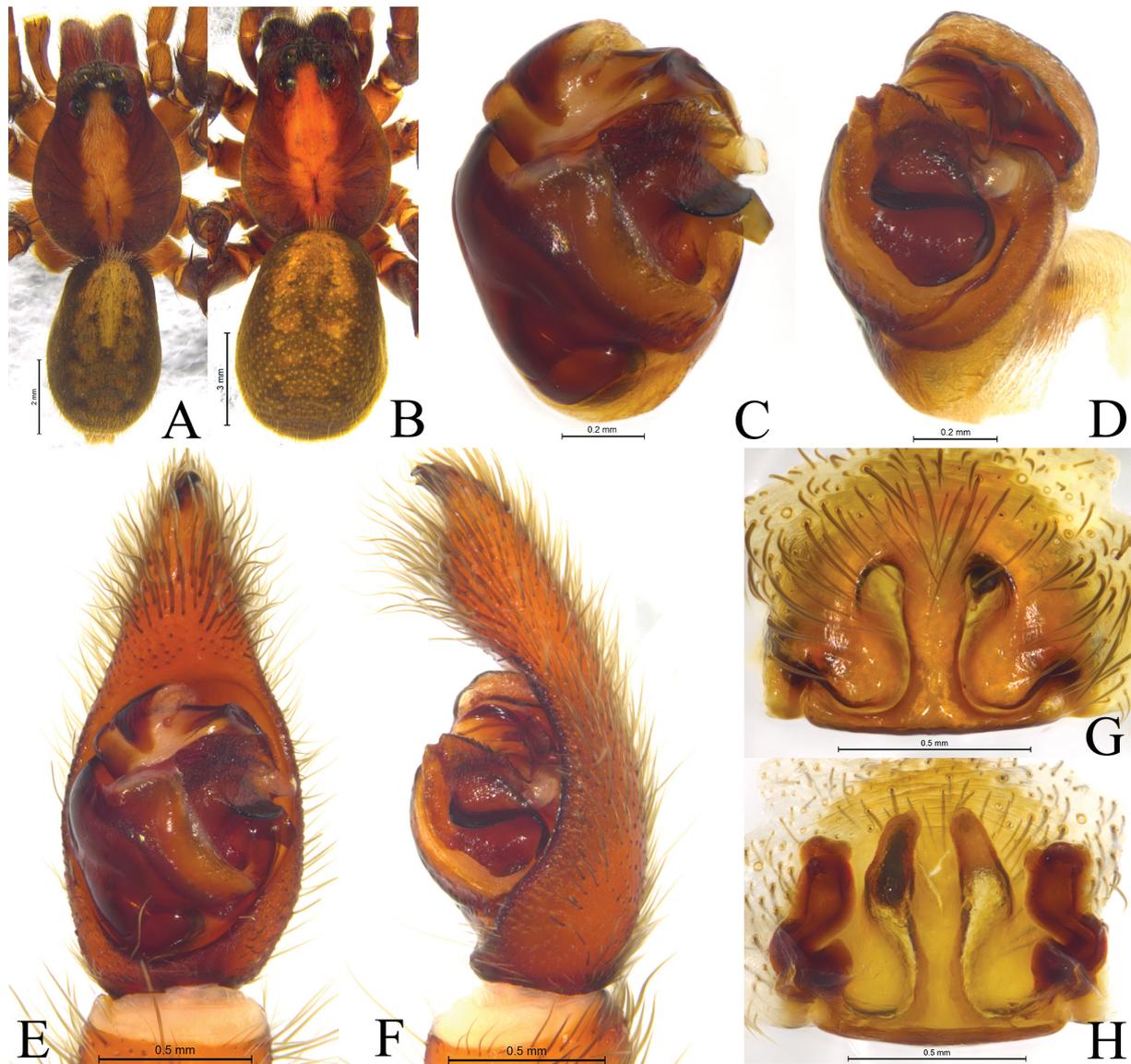


Fig. 5. *Serratacosa multidontata* (Qu, Peng & Yin, 2010) comb. nov. **A.** Holotype, ♂ (HNU). **B.** Paratype, ♀ (HNU). **C–F.** Paratype, ♂ (HNU). **G–H.** Paratype, ♀ (HNU). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Left pedipalp, bulbus, ventral view. **D.** Left pedipalp, retrolateral view. **E.** Left pedipalp, ventral view. **F.** Left pedipalp, retrolateral view. **G.** Epigyne, ventral view. **H.** Vulva, dorsal view.

Discussion

Based on the following characteristics, *Serratacosa* gen. nov. can be identified as a member of the subfamily Lycosinae: median apophysis transverse, with ventrally directed spur and dorsal surface with a sinuous channel; epigyne with an inverted ‘T-shaped’ median septum (Dondale 1986; Piacentini & Grismado 2009).

Wolf spiders mainly live in open habitats (Jocqué & Alderweireldt 2005). *Serratacosa* gen. nov. is distributed from the southern slopes of the Eastern Himalayas to the very dense forests on the southern slopes. Both *S. medogensis* gen. et sp. nov. and *S. multidontata* (Qu, Peng & Yin, 2010) comb. nov. were found in dense forests. All three species addressed in this study have been recorded from the southern slopes of the Eastern Himalayas, which might indicate that the species differentiation of the members of the genus *Serratacosa* gen. nov. is closely related to the uplift of the Qinghai-Tibet Plateau. It can be proposed that there are still many undescribed species on the southern slopes of the Eastern Himalayas awaiting discovery and description.

Acknowledgments

Many thanks are given to our research team members in SWUC (Mr. Zhi-Sun Wu, Tao Yuan and Ms. Piao Liu) and the College of Life Sciences, Hebei University, Baoding, China (Mr. Yan-Nan Mu and Ms. Hui Wang) for their assistance during the field work and collection. We are also thankful to Dr Stephanie F. Loria (American Museum of Natural History, New York) for reviewing the English of this manuscript. This work was supported by the Fundamental Research Funds for the Central Universities

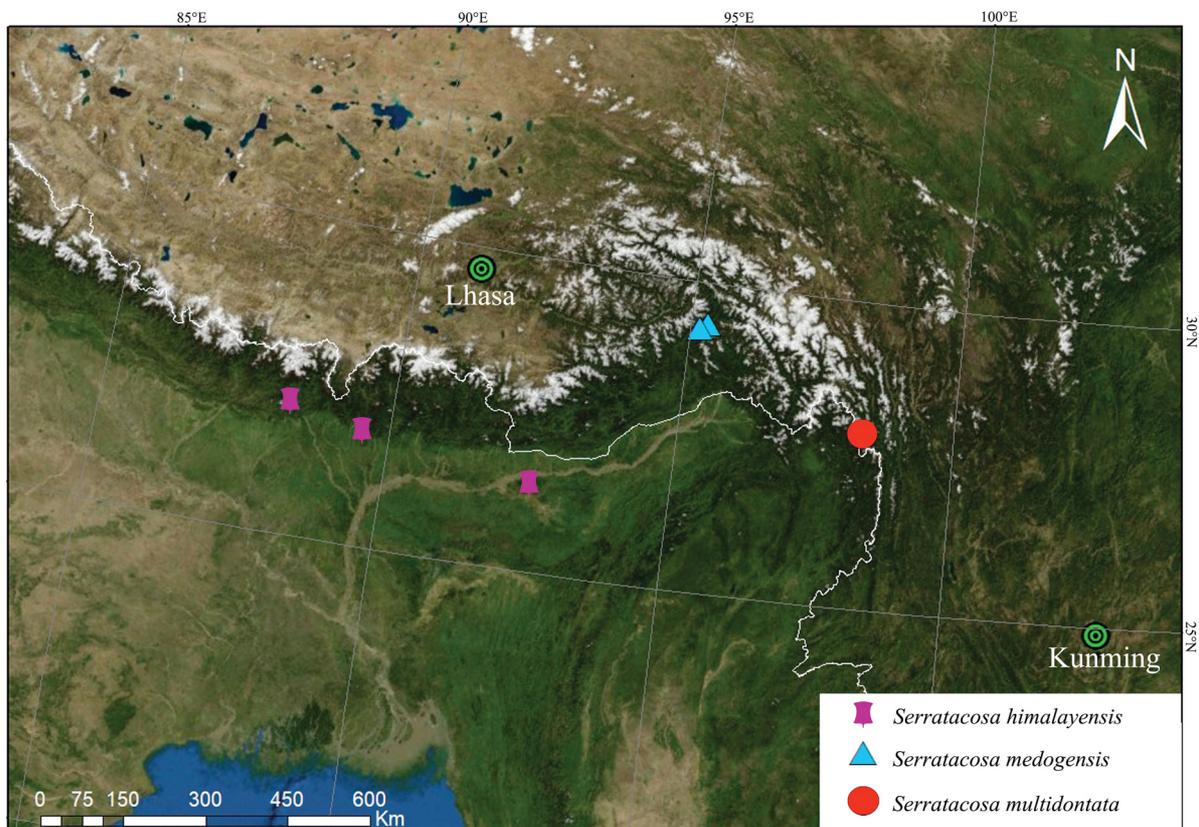


Fig. 6. Distribution of *Serratacosa* gen. nov.

(SWU120051), the National Natural Science Foundation of China (31672278, 31702005), the Key Natural Science Foundation of Chongqing (cstc2019jcyj-zdxmX0006) and the Investigation Project of Basic Science and Technology (2018FY100305) to Zhi-Sheng Zhang and Lu-Yu Wang.

References

- Almquist S. 2005. Swedish Araneae, part 1 – families Atypidae to Hahniidae (Linyphiidae excluded). *Insect Systematics & Evolution, Supplement* 62: 1–284.
- Buchar J. 1997. Lycosidae aus Bhutan 1. Venoniinae und Lycosinae (Arachnida: Araneae). *Entomologica Basiliensis* 20: 5–32.
- Dondale C.D., 1986. The subfamilies of wolf spiders (Araneae: Lycosidae). *Actas X Congreso Internacional de Aracnología* 1: 327–332.
- Framenau, V.W. 2007. Revision of the new Australian genus *Artoriopsis* in a new subfamily of wolf spiders, Artoriinae (Araneae: Lycosidae). *Zootaxa* 1391 (1): 1–34. <https://doi.org/10.11646/zootaxa.1391.1.1>
- Framenau V.W. & Leung, A.E. 2013. *Costacosa*, a new genus of wolf spider (Araneae, Lycosidae) from coastal north-west Western Australia. *Records of the Western Australian Museum, Supplement* 83: 173–184. <https://doi.org/10.18195/issn.0313-122x.83.2013.173-184>
- Gravely F.H. 1924. Some Indian spiders of the family Lycosidae. *Records of the Indian Museum, Calcutta* 26: 587–613.
- Jocqué R., Alderweireldt M., 2005. Lycosidae: the grassland spiders. *Acta Zoologica Bulgarica, Supplement* 1: 125–130.
- Logunov D.V. 2020. On three species of *Hogna* Simon, 1885 (Aranei: Lycosidae) from the Near East and Central Asia. *Arthropoda Selecta* 29 (3): 349–360. <https://doi.org/10.15298/arthsel.29.3.08>
- Lu T., Koh J.K.H., Zhang Z.S. & Li S.Q. 2018. A new *Ovia* species (Araneae, Lycosidae) from Singapore, with the transfer of *Pardosa alboannulata* Yin *et al.*, 1997. *Zootaxa* 4527 (3): 436–450. <https://doi.org/10.11646/zootaxa.4527.3.12>
- Marusik Y.M., Azarkina G.N. & Koponen S. 2004. A survey of east Palearctic Lycosidae (Aranei). II. Genus *Acantholycosa* F. Dahl, 1908 and related new genera. *Arthropoda Selecta* 12 (2): 101–148.
- Myers N., Mittermeier R.A., Mittermeier C.G., da Fonseca G.A.B. & Kent J. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403: 853–858. <https://doi.org/10.1038/35002501>
- Piacentini L.N. & Grismado C.J. 2009. *Lobizon* and *Navira*, two new genera of wolf spiders from Argentina (Araneae: Lycosidae). *Zootaxa* 2195 (1): 1–33. <https://doi.org/10.11646/zootaxa.2195.1.1>
- Piacentini L.N. & Ramírez M.J. 2019. Hunting the wolf: a molecular phylogeny of the wolf spiders (Araneae, Lycosidae). *Molecular Phylogenetics and Evolution* 136: 227–240. <https://doi.org/10.1016/j.ympev.2019.04.004>
- Qu L.L., Peng X.J. & Yin C.M. 2010. Six new species of the spider genus *Pardosa* (Araneae: Lycosidae) from Yunnan, China. *Oriental Insects* 44: 387–404. <https://doi.org/10.1080/00305316.2010.10417623>
- Sankaran P.M., Malamel J.J. & Sebastian P.A. 2017. On the new monotypic wolf spider genus *Ovia* gen. nov. (Araneae: Lycosidae, Lycosinae). *Zootaxa* 4221 (3): 366–376. <https://doi.org/10.11646/zootaxa.4221.3.5>
- Tikader B.K. & Malhotra M.S. 1980. Lycosidae (wolf-spiders). *Fauna India (Araneae)* 1: 248–447.

Wang L.Y., Li Z.X., Zhou K.X. & Zhang Z.S. 2015. Redescription of three *Hippasa* species from China (Araneae: Lycosidae), with a proposed species group-division and diagnosis. *Zootaxa* 3974 (2): 231–244. <https://doi.org/10.11646/zootaxa.3974.2.7>

World Spider Catalog 2021. World Spider Catalog. Version 22.0. Natural History Museum Bern. Available from <http://wsc.nmbe.ch> [accessed 11 May 2021].

Manuscript received: 21 December 2020

Manuscript accepted: 24 May 2021

Published on: 10 August 2021

Topic editor: Rudy Jocqué

Desk editor: Eva-Maria Levermann

Printed versions of all papers are also deposited in the libraries of the institutes that are members of the *EJT* consortium: Muséum national d'histoire naturelle, Paris, France; Meise Botanic Garden, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands; Museo Nacional de Ciencias Naturales-CSIC, Madrid, Spain; Real Jardín Botánico de Madrid CSIC, Spain; Zoological Research Museum Alexander Koenig, Bonn, Germany; National Museum, Prague, Czech Republic.