ZOOLOGICAL RESEARCH

Taxonomic notes on Leptonetidae (Arachnida, Araneae) from China, with descriptions of one new genus and eight new species

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ABSTRACT

Species of the spider family Leptonetidae Simon, 1890 from China are revised based on molecular and morphological data analyses. A new genus, *Jingneta* Wang & Li **gen. nov**., is erected, with *Leptoneta cornea* Tong & Li, 2008 as the type species. Twenty-two Chinese species previously assigned to the genus *Leptoneta* Simon, 1872 are revised, with eight transferred to *Falcileptoneta* Komatsu, 1970, seven transferred to *Jingneta* **gen. nov**., five transferred to *Leptonetela* Kratochvíl, 1978, and one species each transferred to *Longileptoneta* Seo, 2015 and *Masirana* Kishida, 1942. Eight new species are described: i.e., *Falcileptoneta shuanglong* Wang & Li **sp. nov**. (♂), *Jingneta caoxian* Wang & Li **sp. nov**. (♂♀), *J. jingdong* Wang & Li **sp. nov**. (♂♀), *Longileptoneta gutan* Wang & Li **sp. nov**. (♂♀), *L. huangshan* Wang & Li **sp. nov**. (♂♀), *L. shenxian* Wang & Li **sp. nov**. (♂♀), *L. yeren* Wang & Li **sp. nov**. (♂), and *L. zhuxian* Wang & Li **sp. nov**. (♂♀). In total, 127 leptonetid species from six genera are documented from China: nine species of *Falcileptoneta*, nine species of *Jingneta* **gen. nov**., 101 species of *Leptonetela*, six species of *Longileptoneta*, one species of *Masirana*, and one species of *Rhyssoleptoneta* Tong & Li, 2007.

Keywords: Asia; Morphology; New combination; Taxonomy

INTRODUCTION

Spiders of the family Leptonetidae Simon, 1890 include 21 genera and 353 species from North America, the Mediterranean, and East and Southeast Asia (Li, 2020), of which 65 species in nine genera are recognized from North America, 71 species in eight genera are recognized from the Mediterranean, and 217 species from six genera are described from East and Southeast Asia (i.e., *Falcileptoneta* Komatsu, 1970, *Leptoneta* Simon, 1872, *Leptonetela* Kratochvíl, 1978, *Longileptoneta* Seo, 2015, *Masirana* Kishida, 1942, and *Rhyssoleptoneta* Tong & Li, 2007).

The first study of Chinese leptonetids was conducted by Chen et al. (1982) with the description of *Leptoneta huanglongensis* Chen, Zhang & Song, 1982 from Southeast China. In subsequent years, more than 20 species have been described from China. Despite clear differences in the genitalic morphology between the European and Asian species, all have been placed in the European genus *Leptoneta* (Le Peru, 2011). Tong & Li (2007) erected the genus *Rhyssoleptoneta*, with one species from North China as

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the type species. In a series of recent papers, Lin & Li (2010), Chen et al. (2010), Wang & Li (2011), Wang et al. (2017), and He et al. (2019) have reported 96 species from Southwest China and transferred three Chinese species from *Leptoneta* to the genus *Leptonetela*. The disjunct distribution of *Leptonetela* in Eurasia has been discussed in Wang et al. (2017) using phylogenetic analyses.

Despite the historical attention and the distinct morphological differences in male genitalia, the generic limits of 22 *Leptoneta* species from Southeast and North China have never been quantitatively tested. In this study, a phylogenetic assessment of leptonetids from China is presented based on molecular data from three nuclear genes and two mitochondrial genes using Bayesian inference (BI) and maximum-likelihood (ML) analyses. The genera from Asia, North America, and Europe, including the type species of *Leptoneta*, *Leptonetela*, *Longileptoneta*, and *Rhyssoleptoneta*, are included in our analyses. A dichotomous key for East and Southeast Asian genera is provided, along with comparative images for each genus. Eight new species from China are described and illustrated. This study provides a framework for understanding the evolutionary relationships of Asian Leptonetidae.

MATERIALS AND METHODS

Morphological observation

All specimens collected were preserved and further studied in 95% ethanol solution. All terminology follows Tong & Li (2008) and taxonomy procedures follow Wang & Li (2011).

Molecular phylogenetic analyses

We analyzed data from 91 leptonetid individuals belonging to 57 species (including 13 taxa downloaded from GenBank, see Supplementary Table S1). One species of *Hickmania* (Araneae: Austrochilidae) was used as the outgroup, as Austrochilidae is considered as a sister lineage to leptonetids (Fernández et al., 2018). In total, 92 taxa were included in our molecular dataset.

Genomic DNA was extracted from leg and cephalothorax tissue using a TIANamp Genomic DNA Kit (Tiangen Co., China) following the manufacturer's protocols. Five genes were selectively amplified, including mitochondrial genes cytochrome oxidase subunit I (*COI*) and 16S rDNA and nuclear genes histone 3 (*H3*), 28S rDNA, and 18S rDNA. The primers used are reported in Supplementary Table S2, and the reaction conditions follow Zhang & Li (2014). Raw sequences were edited and assembled using DNAMAN (Lynnon BioSoft, Canada). Sequence alignment was performed using MAFFT v.7.0 (Katoh & Standley, 2013) (http://mafft.cbrc.jp/alignment/server/) with the G-INS-i algorithm for *COI* and *H3*, and DNAMAN for *16S*, *18S*, and *28S*. The protein coding genes *COI* and *H3* were translated into amino acid sequences to check for stop codons using ClustalW in MEGA 5 (Tamura et al., 2011).

ML analysis was performed in RAxML v.8.0 (Stamatakis, 2014) using the default rapid hill-climbing algorithm and the GTRGAMMA model to search for the best tree. Clade support was assessed using 1 000 rapid bootstrap replicates. BI was performed in MrBayes v.3.2.6 (Ronquist et al., 2012) using the best partitioning scheme and model selected by PartitionFinder v.1.1.1 (Lanfear et al., 2012) based on the Akaike information criterion (AIC). The partitioning scheme and best-fit DNA substitution models are reported in Supplementary Table S3. BI analysis was run for 20 million generations, with sampling every 1 000 generations, and was checked to ensure the average standard deviation of split frequencies was less than 0.01. Stationarity was checked with Tracer v.1.6 (Rambaut et al., 2014), and the first 25% of trees were removed as burn-in.

References to figures from cited papers are listed in lowercase (figure or figures); figures from this paper are noted with an initial capital (Figure or Figures).

RESULTS

Molecular analysis

Sequence data: For the 91 leptonetid taxa and one outgroup, 85, 84, 54, 83, and 74 sequences were complete for *COI*, *16S*, *18S*, *28S*, and *H3*, respectively; others exhibited varying degrees of missing data. In total, a 4 000 bp concatenated dataset was analyzed using all 92 taxa, including 760 bp of *COI*, 392 bp of *16S*, 1 665 bp of *18S*, 488 bp of *28S*, and 265 bp of *H3*. All sequences were submitted to GenBank (accession Nos. are shown in Supplementary Table S1).

Our results showed that the topology of both the BI (Figure 1) and ML (Supplementary Figure S1) trees is consistent at the genus level, but most interior nodes are not well supported, and branch lengths are long, indicating distinct genetic divergence of each lineage. Thus, these results suggest that Chinese leptonetids comprise eight major clades.

A *Leptonetela* clade is recovered with high support (bootstrap (BS)=88, posterior probability (PP=0.99)) and includes nine species from China and six species from Europe. The Chinese species *L. lianhua* Wang & Li, 2017 is located at the base of the clade, and the type species *L. kanellisi* (Deeleman-Reinhold, 1971), two Asian species, *L. flabellaris* Wang & Li, 2011 and *L. pungitia* Wang & Li, 2011, and European species *L. arvanitidisi* Wang & Li, 2016, *L. paragamiani* Wang & Li, 2016, *L. penevi* Wang & Li, 2016, *L. thracia* Gasparo, 2005, and *L. chiosensis* Wang & Li, 2011 form a clade (PP=0.97), indicating that the disjunct distribution of the genus is not an artifact of misplaced taxa.

The monophyly of Chinese *Rhyssoleptoneta* is strongly supported (BS=100, PP=1). This clade includes the type species *R. latitarsa* Tong & Li, 2007 and one cave species.

No species from China cluster with *Leptoneta convexa* Simon, 1872, the type species of the genus. Five species from Southeast China (Zhejing) are recovered in a clade (BS=67, PP=0.99) with 10 species of *Falcileptoneta*, one species of *Longileptoneta*, and one species of *Leptoneta* from Korea. Considering the type species of the genus *Longileptoneta*, and that *Leptoneta* species are not included in this clade and

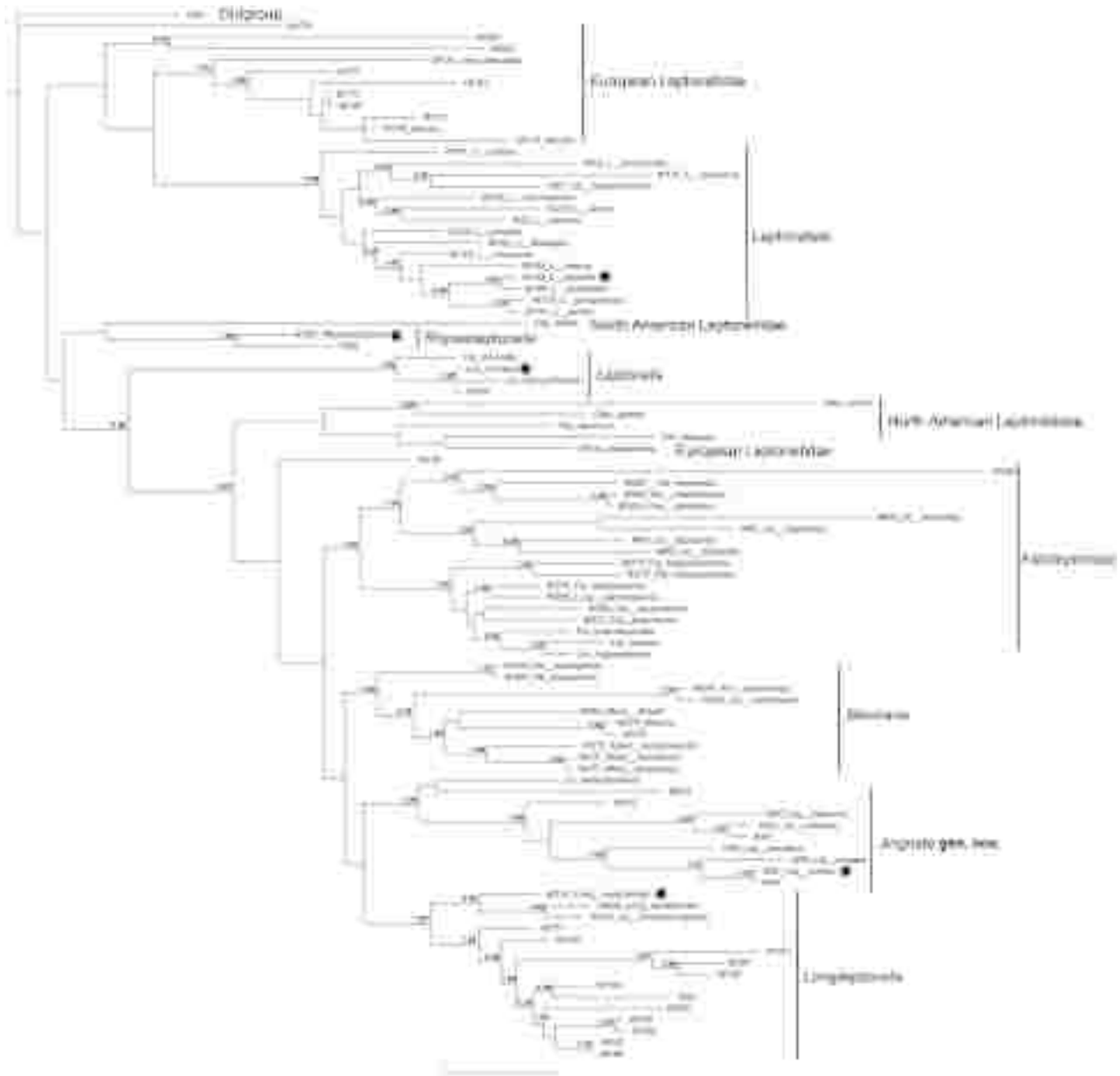

Figure 1 Bayesian phylogenetic tree of 57 taxa of Leptonetidae

Hickmania was used as the outgroup. Posterior probabilities <0.95 are not shown. Asterisk indicates type species of corresponding genus.

morphological characters differ (male palpal femur lacking spine and tibia having spine-like apophysis), *Leptoneta anocellata* Chen, Zhang & Song, 1986, *L. lingqiensis* Chen, Shen & Gao, 1984, and *L. taizhensis* Chen & Zhang, 1993 are transferred to *Falcileptoneta*. One new species is described and illustrated (Figures 3, 4). We have no adult specimens for taxa W89 and W254, thus they are not described here.

Species from North China (Beijing, Hebei, Henan), *Leptoneta cornea* Tong & Li, 2008, *L. exilocula* Tong & Li, 2008, *L. foliiformis* Tong & Li, 2008, *L. setulifera* Tong & Li, 2008, and *L. wangae* Tong & Li, 2008, and two new species are recovered as monophyletic (PP=0.99). A new genus, *Jingneta* **gen. nov.**, is erected for the species in this clade, with *Leptoneta cornea* Tong & Li, 2008 as the type species.

Ten new species from South China (Anhui, Jiangxi) form a sister clade (BS=96, PP=1) to the lineage (BS=100, PP=0.99), with two *Longileptoneta* species and one *Leptoneta* from Korea, including *L. songniensis* Seo, 2015, the type species of the genus *Longileptoneta* Seo, 2015. Considering the high support (BS=98, PP=0.92) and morphology (male palpal femur with strong spines, tibia with columnar apophysis distally), the new species from South China (Anhui, Jiangxi)

are transferred to the genus *Longileptoneta*, and five are described and illustrated herein (Figures 8–16).

New species W186 from Taiwan, China, and W202 from Henan, North China, each form a clade, respectively. Two new species, W204 and W205 from Henan, North China, form a well-supported clade (BS=93, PP=0.96). Due to the absence of adult specimens, these probable new species are not described here.

The genera *Masirana* Kishida, 1942, *Longileptoneta*, and *Falcileptoneta* are not recovered as monophyletic. *Falcileptoneta* is rendered polyphyletic by the inclusion of *Longileptoneta gayaensis* Seo, 2016 and *Leptoneta hogyegulensis* Seo, 2016 from Korea (BS=98, PP=1.00), and *F. juwangensis* Seo, 2015 and *F. usihanana* (Komatsu, 1961) cluster with species of *Masirana* (BS=88, PP=0.98). Within the *Longileptoneta* clade, *Leptoneta kwangreungensis* Kim, Jung, Kim & Lee, 2004 is sister to *Longileptoneta weolakensis* Seo, 2016.

Taxonomy

Family Leptonetidae Simon, 1890

Leptonetidae Simon, 1890: 80

Key to genera of Leptonetidae occurring in East and Southeast Asia – males only (Figure 2)

1 Palpal femur with strong spines.....2

—Palpal femur lacking strong spines.....4

2(1) Palpal tibia with two distal apophyses of different type; bristle-like, hooked, fan-shaped, or transparent and cone-like.....*Masirana*

—Palpal tibia apically with two apophyses of same type, or only one……...……...……...3

3(2) Palpal tibia with 1–2 horn-like apophyses, bulb with two sclerites, prolateral sclerite absent.....*Jingneta***gen**.**nov**.

—Palpal tibia with one columnar apophysis, apophysis tip with one spine; in some species, apophysis absent, tibia curved prolaterally, cymbium with spines prolaterally, bulb with three sclerites……*Longileptoneta*

4(1) Palpal tibia with strong spines or apophyses 5

—Palpal tibia lacking strong spines or apophyses.....6

5(4) Palpal tibia with row of retrolateral spines .....*Leptonetela*

—Palpal tibia with spine-like apophysis distally.....*Falcileptoneta*

6(4) Cymbium with one small apophysis prolaterally, medially without transverse depression.....*Rhyssoleptoneta*

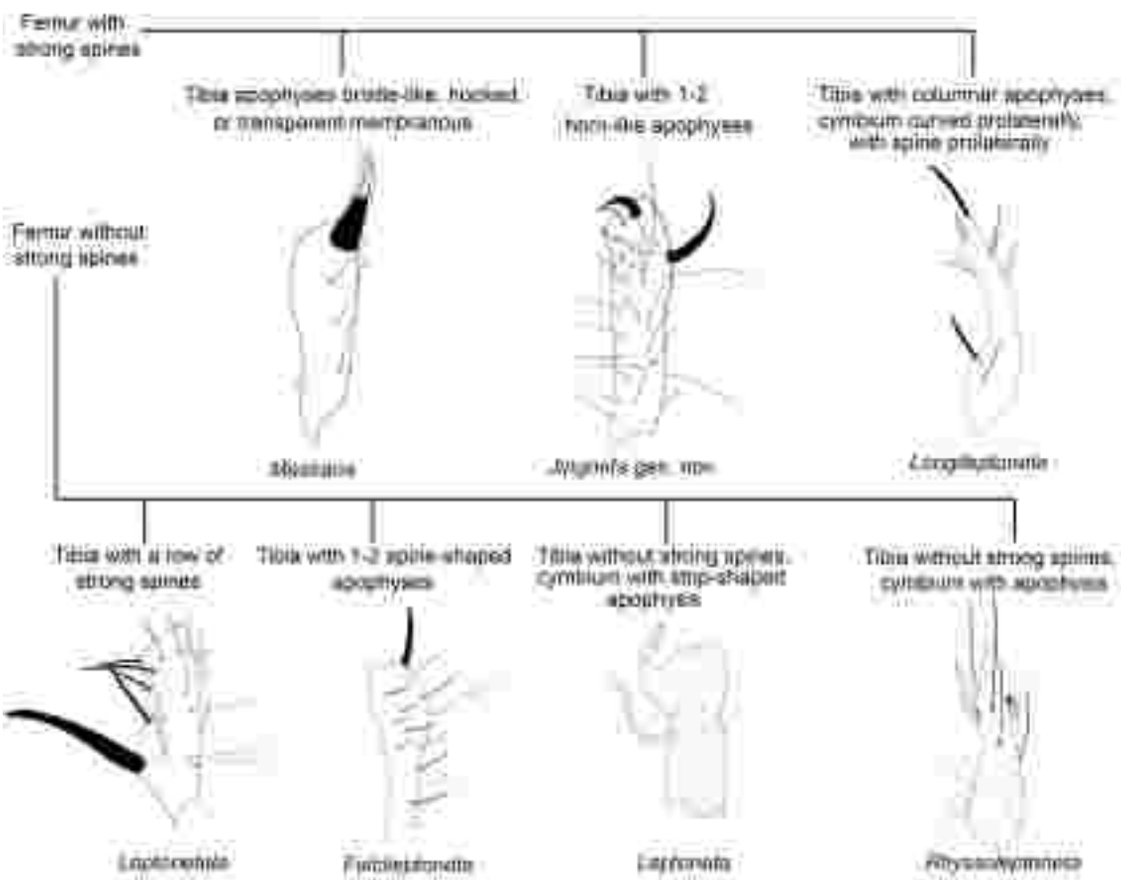

Figure 2 Key to leptonetid genera occurring in East and Southeast Asia

—Cymbium with deep transverse depression medially, and one strip-shaped apophysis near depression..... .....*Leptoneta*

Genus *Falcileptoneta* Komatsu, 1970
Falcileptoneta Komatsu, 1970: 1
Type species: *Leptoneta striata* Oi, 1952 from Japan.

Diagnosis: This genus is similar to *Masirana* but can be distinguished by male palpal femur lacking spines and tibia with 1–2 spine-like apophyses (vs. femur with strong spines, curved spine-like apophysis, and funnel-shaped apophysis in *Masirana*); *Falcileptoneta* can be distinguished from *Jingneta* **gen. nov.** and *Longileptoneta* by *Falcileptoneta* lacking spines on palpal femur, and can be distinguished from *Leptonetela*, *Rhyssoleptoneta*, and *Leptoneta* by male palpal tibia with 1–2 spine-like apophyses distally (vs. tibia with row of retrolateral spines in *Leptonetela*, tibia without spines in *Rhyssoleptoneta* and *Leptoneta*).
Description: Male palp: palpal femur without spines or apophyses. Patella with one slender spine apically. Tibia with three trichobothria and apically with 1–2 spine-like apophyses dorsolaterally. Rarely, represented by only one seta. In some species, middle part of tibia contains feathery bristle, ventral apophysis missing. Cymbium with retrolateral branch and weak transverse depression. Bulb with sickle-like embolus apically.
Female: Vulva: spermathecae short, not coiled.
Composition: Before this study, 50 species were documented in Japan and Korea.
Distribution: China, Japan, Korea.

***Falcileptoneta anocellata* (Chen, Zhang & Song, 1986) comb. nov.**
Leptoneta anocellata Chen et al., 1986: 40, figures 1–4; Song, 1987: 98, figure 61; Chen & Zhang, 1991: 60, figures 51.1–4; Song et al., 1999: 50, figure 20I, T

Type material: Holotype ♀ (Institute of Zoology, Chinese Academy of Sciences, Beijing, China, originally named Institute of Zoology, Academia Sinica, IZCAS), cave in Jinhua (N29º10′, E119º35′), Zhejiang, China, 10 July 1983. **Paratypes** 2♂1♀ (IZCAS), same data as holotype, examined.
Other material examined: 1♂2♀ (IZCAS), Shuanglong Cave (N29º20′, E119º63′, elevation ca. 700 m a.s.l.), Jinhua City, Zhejiang, China, 9 August 2018, collectors (coll.) Ming-Jie Xu and Zi-Yi Wang.
Description: Male: Eyes lacking. Chelicerae with nine promarginal teeth and eight slender retromarginal teeth. Abdomen oval, yellowish. Male palpal femur with row of nine long setae, tibia with one short, stick-shaped apophysis distally, tip of apophysis with one slender spine; bulb with sickle-like embolus, and three sclerites: S-shaped prolateral sclerite and transparent median and retrolateral sclerites.
Female: Eyes lacking. Chelicerae with nine promarginal teeth and nine slender retromarginal teeth. Vulva with sinuous spermathecae. For figures and detailed information, see Chen et al. (1986).
Comments: This species is transferred to *Falcileptoneta* based on molecular analysis and tibia with one short, stick-shaped apophysis, tip of apophysis with one spine.
Distribution: China (Zhejiang).

***Falcileptoneta arquata* (Song & Kim, 1991) comb. nov.**
Leptoneta arquata Song & Kim, 1991: 20, figures 1–3; Song et al., 1999: 50, figure 20J

Type material: Holotype ♀ (IZCAS), Laodian, Mount West Tianmu (N30º18′, E119º24′), Zhejiang, China, May 1987, examined.
Description: Female: Eyes six. Chelicerae with eight small promarginal teeth and four small retromarginal denticles. Abdomen oval, yellowish. Vulva with pair of sperm ducts and sinuous spermathecae. For figures and detailed information, see Song et al. (1999).
Male: Unknown.
Comments: This species is transferred to *Falcileptoneta* based on short, sinuous spermathecae.
Distribution: China (Zhejiang).

***Falcileptoneta huisunica* (Zhu & Tso, 2002) comb. nov.**
Leptoneta huisunica Zhu & Tso, 2002: 565, figures 6–9, 22

Type material: **Holotype** ♂ (National Museum of Natural Science, Taichung, China, NMNS-THU), Huisun Experimental Forest Station, Nantou County, Taiwan, China, April 1998, coll. Sheng-Hai Wu. **Paratypes** 4♂ (NMNS-THU), same locality as holotype but collected at December 1997, April 1998, and February 1998, coll. Hai-Yin Wu, not examined.
Description: Male: Eyes six. Chelicerae light yellow brown, with seven small promarginal teeth and five retromarginal teeth. Palpal femur lacking spines, patella with one short spine dorsally, tibia with one hook-like lateral apophysis distally; cymbium with two distal branches. For figures and detailed information, see Zhu & Tso (2002).
Female: Unknown.
Comments: This species is transferred to *Falcileptoneta* based on male palpal femur lacking spines and tibia with one hook-like apophysis apically.
Distribution: China (Taiwan).

***Falcileptoneta lingqiensis* (Chen, Shen & Gao, 1984) comb. nov.**
Leptoneta lingqiensis Chen et al., 1984: 9, figure 7–15; Song, 1987: 100, figure 64; Chen & Zhang, 1991: 59, figure 50.1–6; Song et al., 1999: 50, figure 6C, 20M, 21A, B

Type material: Holotype ♂ (Zhejiang Museum of Natural History, Hangzhou, China, depository institution changed, originally in Hangzhou Normal College, ZMNH), Lingxi Cave, Jiande County, Zhejiang, China, 14 May 1984, coll. Yong-Chang Shen. **Paratypes** 9♂13♀ (ZMNH), Jiande County, 11

June 1984, not examined.
Other material examined: 1♂ (IZCAS), Lingqi Cave (N29º36', E119º08', elevation ca. 260 m a.s.l.), Jiande City, Zhejiang, China, 30 July 2018, coll. Ming-Jie Xu and Zi-Yi Wang.
Description: Male: Eyes six. Chelicerae yellow, fang brown, with eight small promarginal teeth and six retromarginal teeth. Abdomen oval, grayish yellow. Palpal femur lacking spines, patella with one horn-shaped apophysis dorsally, tibia with one cylindrical apophysis, apophysis with two short, curved spines at tip. Bulb with dark, triangular embolus and three sclerites: spine-like prolateral sclerite, wide, cuneiform median sclerite, and transparent retrolateral sclerite.
Female: Similar to male in coloration and general features but larger and with longer legs. Vulva with copulatory ducts and spermathecae. For figures and detailed information, see Chen et al. (1984).
Comments: This species is transferred to *Falcileptoneta* based on molecular analysis, and male palpal femur lacking spines, tibia with one apophysis apically, and tip of apophysis with two arcuate spines.
Distribution: China (Zhejiang).

***Falcileptoneta monodactyla* (Yin, Wang & Wang, 1984) comb. nov.**
Leptoneta monodactyla Yin et al., 1984: 366, figure 2a–d; Song, 1987: 104, figure 67; Song et al., 1999: 51, figure 21H–I; Yin et al., 2012: 156, figure 26a–d

Type material: Holotype ♂ (Hunan Normal University, Changsha, China, originally named Hunan Normal College, HNU), Yanling County (originally named Lingxian), Hunan, China, 5 December 1982, coll. Jia-Fu Wang, collected under stone, not examined.
Description: Male: Eyes six. Chelicerae with five small promarginal teeth and no retromarginal teeth. Abdomen orange, with tan stripes. Palpal femur lacking spines, tibia with one long, finger-shaped apophysis and one slender spine apically. For figures and detailed information, see Yin et al. (1984).
Female: Unknown.
Comments: This species is transferred to *Falcileptoneta* based on male palpal femur lacking spines and tibia with one finger-shaped apophysis and one slender spine apically.
Distribution: China (Hunan).

***Falcileptoneta nigrabdomina* (Zhu & Tso, 2002) comb. nov.**
Leptoneta nigrabdomina Zhu & Tso, 2002: 567, figure 10–13, 23

Type material: Holotype ♂ (NMNS-THU), Huisun Experimental Forest Station, Nantou County, Taiwan, China, April 1998, coll. Hai-Yin Wu, not examined.
Description: Male: Eyes six. Chelicerae light yellow brown, with seven promarginal teeth and five retromarginal teeth. Abdomen elliptical, with scattered, thin, white setae, dorsum black brown, with several yellow patches, venter and spinnerets light yellow. Palpal femur lacking spines, tibia with two apophyses distolaterally, one spine-like and one horn-shaped; cymbium unbranched. For figures and detailed information, see Zhu & Tso (2002).
Female: Unknown.
Comments: This species is transferred to *Falcileptoneta* based on male palpal femur lacking spines and tibia with one spine and one horn-shaped apophysis apically.
Distribution: China (Taiwan).

***Falcileptoneta taiwanensis* (Zhu & Tso, 2002) comb. nov.**
Leptoneta taiwanensis Zhu & Tso, 2002: 568, figure 14–17, 20, 21

Type material: Holotype ♂ (NMNS-THU), Huisun Experimental Forest Station, Nantou County, Taiwan, China, February 1998, coll. Hai-Yin Wu, not examined.
Description: Male: Eyes six. Chelicerae light orange, with eight promarginal teeth and five retromarginal teeth. Abdomen oval, dorsum yellow, with one light yellow brown rectangular patch behind epigastric fold. Palpal femur and tibia lacking spines, tibia with one spine-shaped apophysis distally, cymbium with two branches distally. For figures and detailed information, see Zhu & Tso (2002).
Female: Unknown.
Comments: This species is transferred to *Falcileptoneta* based on male palp lacking femoral spines and tibia having one spine-like apophysis distally.
Distribution: China (Taiwan).

***Falcileptoneta taizhensis* (Chen & Zhang, 1993) comb. nov.**
Leptoneta taizhensis Chen & Zhang, 1993: 218, figure 2A–F; Song et al., 1999: 51, figure 20Q, 21J, K

Type material: Holotype ♀ (ZMNH), Taizhen Cave, Quzhou City, Zhejiang, China, 7 August 1991, coll. Zhang-Fu Chen. **Paratypes** 8♂8♀ (ZMNH), same data as holotype, not examined.
Other material examined: 1♂ (IZCAS), Taizhen Cave (N28º11′, E118º08′, elevation ca. 680 m a.s.l.), Quzhou City, Zhejiang, China, 19 July 2018, coll. Ming-Jie Xu and Zi-Yi Wang.
Description: Male: Eyes absent. Chelicerae orange, with eight promarginal teeth and eight small retromarginal denticles. Abdomen taupe, covered with long setae. Palpal femur lacking spines, tibia with one strong, spine-like apophysis with curved tip. Bulb with dark, hook-like embolus and three sclerites: spine-like prolateral sclerite, wide and shoehorn-shaped median sclerite, and transparent retrolateral sclerite.
Female: Similar to male in coloration and general features but smaller and with shorter legs. Vulva with sperm ducts and reniform-shaped spermathecae. For figures and detailed

information, see Chen & Zhang (1993).
Comments: This species is transferred to *Falcileptoneta* based on molecular analysis, as well as male palpal femur lacking spines and tibia with one strong, spine-like apophysis apically with curved tip.
Distribution: China (Zhejiang).

***Falcileptoneta shuanglong* Wang & Li sp. nov.**
Figures 3, 17.

Type material: Holotype ♂ (IZCAS), Shuanglong Cave, Jinhua City (N29°12', E119°38', elevation ca. 670 m a.s.l.), Zhejiang, China. 6 August 2018, coll. Ming-Jie Xu and Zi-Yi Wang. **Paratype** 1♂ (IZCAS), same data as holotype.
Etymology: The specific name is a noun in apposition and refers to the type locality.
Diagnosis: This new species is similar to *Falcileptoneta odaesanensis* Xu, Kim, Yoo, Nam & Li, 2019, *F. geumdaensis* Seo, 2016, and *F. juwangensis* but can be separated by male palpal tibia with one apophysis distally, apophysis with short, curved spines at tip (Figure 3D) (vs. three spine-like apophyses distally on tibia in *F. odaesanensis*, two spur-like apophyses distally on tibia in *F. geumdaensis*, and two transparent apophyses distally on tibia in *F. juwangensis*).
Description: Male (holotype): Total length 2.24, prosoma 0.96 long, 0.83 wide. Opisthosoma 1.28 long, 0.96 wide (Figure 3A). Leg measurements: I 9.35 (2.56, 0.32, 2.88, 2.24, 1.35); II 7.57 (2.31, 0.26, 2.24, 1.67, 1.09); III 6.54 (1.67, 0.32, 1.99, 1.47, 1.09); IV 8.20 (2.44, 0.38, 2.31, 1.92, 1.15). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma dark brown, ovoid. Palp as in Figure 3B–D: femur lacking spines; patella with one short, strong dorsal spine; tibia with one apophysis distally, apophysis with short, curved spines at tip; bulb with triangular, transparent embolus and three sclerites: ribbon-like prolateral sclerite, willow leaf-shaped median sclerite in ventral view, and transparent retrolateral sclerite.
Female: Unknown.
Distribution: China (Zhejiang).

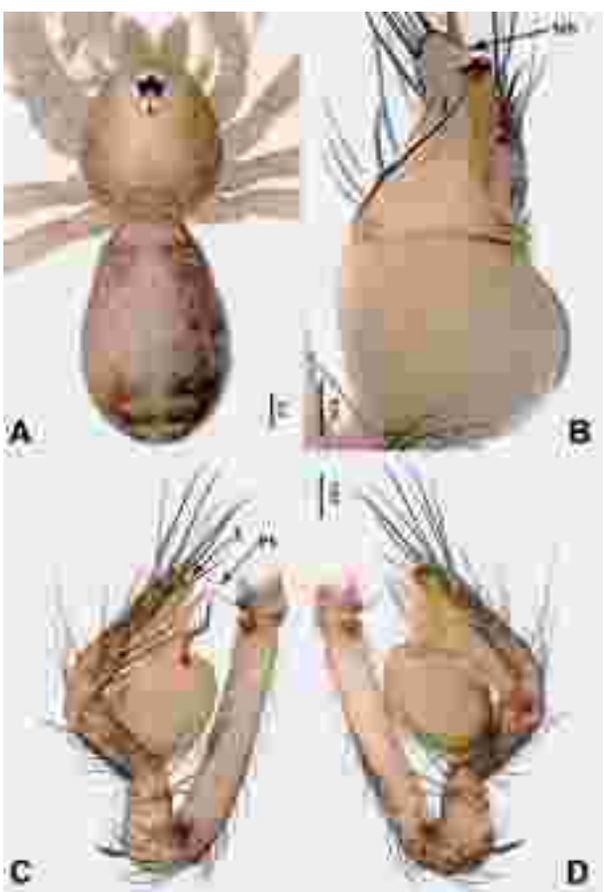

Figure 3 ***Falcileptoneta shuanglong* sp. nov., male holotype**
A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

Genus *Jingneta* Wang & Li gen. nov.
Type species: *Leptoneta cornea* Tong & Li, 2008 from China.

Etymology: The generic name is derived from the pinyin word "Jing", referring to Beijing City (Jing is a short name for Beijing), where the genus is distributed, and "*-neta*" as part of the genus *Leptoneta*. The gender is feminine.
Diagnosis: *Jingneta* **gen. nov.** males are similar to those in the genus *Longileptoneta*, by strong spines on femur of male palp but can be distinguished by tibia with one or two horn-shaped or spine-like apophyses; cymbium branched distally, lacking transverse depression; bulb with two sclerites, prolateral sclerite absent.
Description: Male: Length 1.0–3.0. Eyes six. Carapace brown and white. Median groove, cervical grooves, and radial furrows distinct, dark brown. Opisthosoma gray, oval. Male palp: Palpal femur with ventral and dorsal rows of strong spines, tibia with 1–2 horn-shaped or spine-like apophyses in most species, and cymbium lacking transverse depression. Bulb with horn-like, leaf-shaped, or ribbon-like median sclerite, prolateral sclerite absent, and retrolateral sclerite transparent.
Female: Similar to male in coloration and general features but larger and with shorter legs. Vulva contains pair of sperm ducts and sinuous spermathecae.

***Jingneta caoxian* Wang & Li sp. nov.**
Figures 4, 5, 17

Type material: Holotype ♂ (IZCAS), Caoxian Cave, Mancheng Town (N39°01', E115°06'), Hebei, China, 22 September 2011, coll. Chun-Xia Wang. **Paratype** 1♀ (IZCAS), same data as holotype.
Etymology: The specific name is a noun in apposition and refers to the type locality.
Diagnosis: This new species is similar to *J. foliiformis* but can

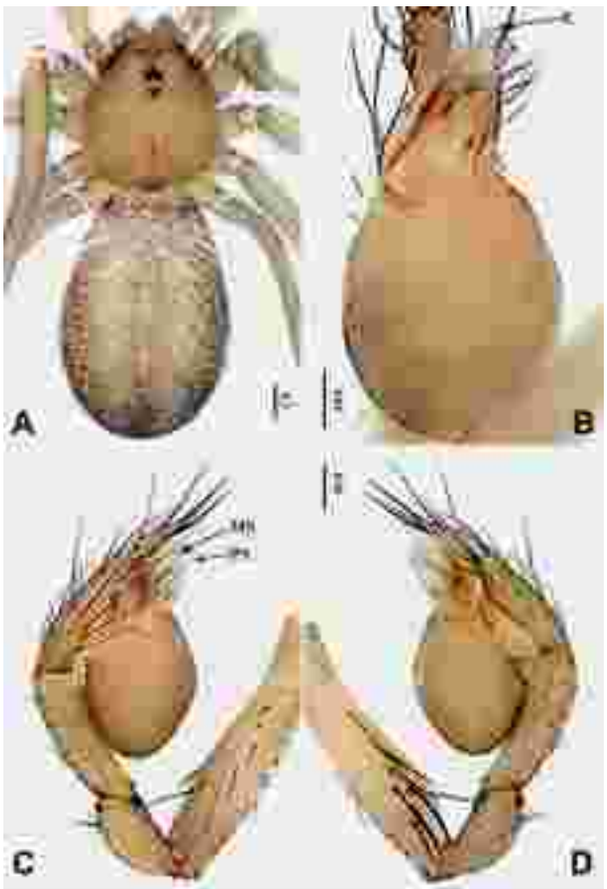

Figure 4 ***Jingneta caoxian*** **sp. nov., male holotype**
A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

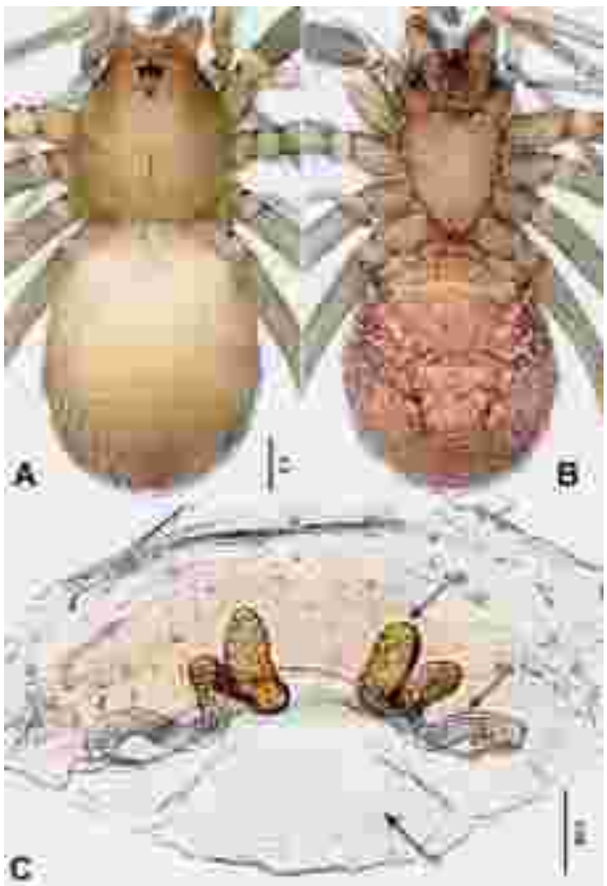

Figure 5 ***Jingneta caoxian*** **sp. nov., female paratype**
A: Habitus, dorsal view; B: Habitus, ventral view; C: Internal genitalia, dorsal view. At: Atrium; SS: Spermathecae stalk; SH: Spermathecae.

be separated by a combination of the following characters: male palpal femur with seven retrolateral spines, median sclerite of palpal bulb shoehorn-shaped, and distal part transparent; in females, atrium oval (Figures 4B–D, 5C) (vs. male palpal femur with four retrolateral spines, median sclerite of bulb sclerotized, S-shaped; in female, atrium sub-rectangular in *J. foliiformis*).

Description: Male (holotype): Total length 2.03. Prosoma 1.00 long, 0.63 wide. Opisthosoma 1.03 long, 0.78 wide (Figure 4A). Leg measurements: I 6.86 (1.92, 0.32, 2.18, 1.54, 0.90); II 4.43 (1.09, 0.26, 1.35, 1.09, 0.64); III 3.90 (1.09, 0.19, 1.15, 0.96, 0.51); IV 5.31 (1.54, 0.38, 1.60, 1.15, 0.64). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma dark brown, ovoid. Palp as in Figure 4B–D: femur with row of seven strong retrolateral spines; tibia with one short ventral spine; cymbium branched distally. Bulb with triangular, transparent embolus, ribbon-like, distal transparent median sclerite, and transparent retrolateral sclerite.

Female (paratype): Total length 1.66. Prosoma 0.69 long, 0.72 wide. Opisthosoma 0.97 long, 0.88 wide (Figure 5A, B). Leg measurements: I 5.32 (1.41, 0.38, 1.60, 1.22, 0.71); II 4.16 (1.35, 0.32, 1.15, 0.83, 0.51); III - (0.96, 0.26, 0.90, 0.77, -); IV - (1.35, 0.26, -, -, -). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma light brown, ovoid. Vulva with pair of sperm ducts and sinuous spermathecae, atrium oval, conspicuous (Figure 5C).

Distribution: China (Hebei).

Jingneta cornea **(Tong & Li, 2008) comb. nov.**
Leptoneta cornea Tong & Li, 2008: 375, figure 1A–G

Type material: Holotype ♂ (Muséum national d'Histoire naturelle, Paris, France, MNHN), Shenxian Cave, Shijiaying Town (N39°52', E115°41'), Fangshan District, Beijing City, China. 06 March 2005, coll. Qian Wang and Yan-Yun Bi. **Paratypes:** 1♂5♀ (IZCAS) and 2♀ (MNHN), same data as holotype; 1♂5♀ (IZCAS), Beijing City, Mentougou District (N39°52', E116°04'), Guanyin Cave (near Jietaishi Temple), 28 April 2005, coll. Hai-Feng Chen and Xu Han; 2♀ (MNHN), Beijing City, Mentougou District (N39°52', E116°04'), Guanyin Cave (near Jietaishi Temple), 28 April 2005, coll. Hai-Feng

Chen and Xu Han. All types in IZCAS examined, those in MNHN not examined.
Other material examined: 1♂1♀ (IZCAS), Sunbin Cave (N39º52′, E116º04′), near Jietaisi Temple, Mentougou District, Beijing City, China, 13 May 2011, coll. Chun-Xia Wang.
Description: Male: Eyes six. Chelicerae light brown, with nine promarginal teeth and six small retromarginal teeth. Abdomen oval, pale yellow. Palpal femur with strong ventral spines, tibia with three long dorsal trichobothria and two strong dorsoretrolateral hook-like spines. Bulb with dark, short embolus, transparent, horn-shaped retrolateral sclerite, and spine-like median sclerite. Cymbium branched distally.
Female: Similar to male in coloration and general features but larger and with shorter legs. Vulva with pair of sperm ducts and sinuous spermathecae, atrium semi-circular, conspicuous. For figures and detailed information, see Tong & Li (2008).
Distribution: China (Beijing).

***Jingneta exilocula* (Tong & Li, 2008) comb. nov.**
Leptoneta exilocula Tong and Li, 2008: 378, figure 2A–H

Type material: Holotype ♂ (MNHN), Bianfu Cave, Hebeizhen Town (N39°48', E115°54'), Fangshan District, Beijing City, China, coll. Hai-Feng Chen and Yan-Feng Tong. **Paratypes** 2♂2♀ (IZCAS) and 2♀ (MNHN), same data as holotype. All types in IZCAS examined, those in MNHN not examined.
Other material examined: 1♂1♀ (IZCAS), Bianfu Cave (N39º48′, E115º54′), Hebei Town, Fangshan District, Beijing City, China, 20 September 2011, coll. Chun-Xia Wang.
Description: Male: Eyes six Chelicerae light brown, with eight promarginal teeth and six small retromarginal teeth. Abdomen oval, pale gray. Palpal femur with many long spines; tibia with three long dorsal trichobothria and one strong, short, hook-like spine distolaterally. Cymbium branched distally. Bulb with dark, curved embolus, transparent, wide, leaf-shaped retrolateral sclerite, and spine-like median sclerite.
Female: Similar to male in coloration and general features but with shorter legs. Vulva with pair of sperm ducts and long, sinuous spermathecae. For figures and detailed information, see Tong & Li (2008).
Comments: This species is transferred to *Jingneta* **gen. nov.** based on male palpal femur with many long spines, tibia with one strong, short, hook-like spine distolaterally, and female with pair of sinuous spermathecae.
Distribution: China (Beijing).

***Jingneta foliiformis* (Tong & Li, 2008) comb. nov.**
Leptoneta foliiformis Tong & Li, 2008: 378, figure 3A–G.

Type material: Holotype ♂ (MNHN), Yunshui Cave, Shangfangshan Mountain (N39°39', E115°48'), Fangshan District, Beijing City, China, 22 January 2005, coll. Hai-Feng Chen and Xu Han. **Paratypes:** 3♂4♀ (IZCAS) and 2♂2♀ (MNHN), same data as holotype; 2♂1♀ (IZCAS), same locality as holotype, 1 September 2005, coll. Yan-Feng Tong and Qian Wang; 7♂12♀ (IZCAS), Hebei, Mancheng County, Caojiayu Village, Caoxian Cave (N39°03', E115°10'), 9 June 2005, coll. Yan-Feng Tong and Qian Wang; 2♂2♀ (MNHN), Hebei, Mancheng County, Caojiayu Village, Caoxian Cave (N39°03', E115°10'), 9 June 2005, coll. Yan-Feng Tong and Qian Wang. All types in IZCAS examined, those in MNHN not examined.
Other material examined: 1♂1♀ (IZCAS), Yunshui Cave (N39º39′, E115º48′), Shangfang Mountain, Fangshan District, Beijing City, China, 12 May 2011, coll. Chun-Xia Wang.
Description: Male: Eyes six. Chelicerae light brown, with seven promarginal teeth and four small retromarginal teeth. Abdomen oval, pale gray, no distinct pattern on dorsum. Palpal femur with some long ventral spines, tibia with three long dorsal trichobothria and two short, slender spines distally. Bulb with dark, short embolus, transparent, horn-shaped retrolateral sclerite, and spine-like median sclerite.
Female: Similar to male in coloration and general features but legs shorter. Vulva with pair of sperm ducts and long, sinuous spermathecae. For figures and detailed information, see Tong & Li (2008).

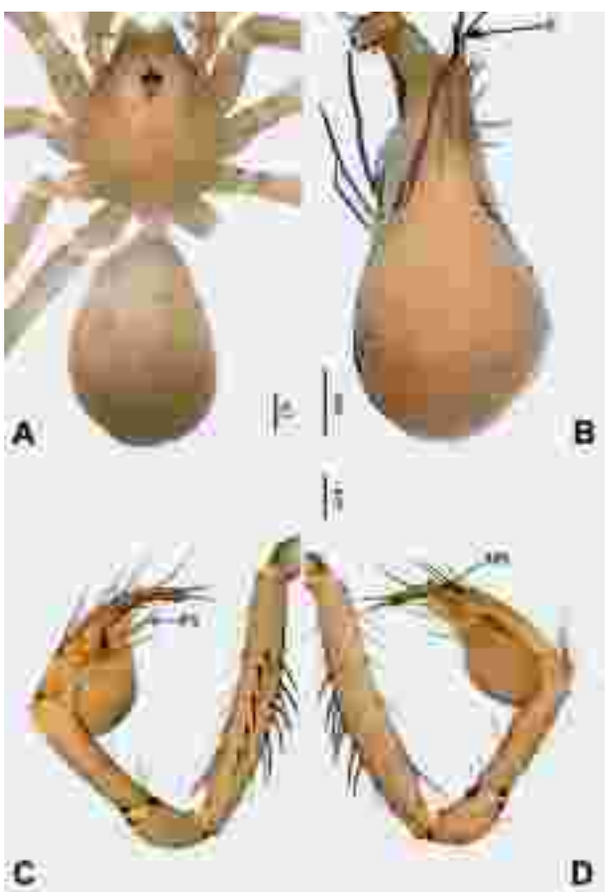

Figure 6 ***Jingneta jingdong* sp. nov., male holotype**
A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

Comments: This species is transferred to *Jingneta* **gen. nov.** based on molecular analysis, as well as male palpal femur with long spines and tibia with two short, slender spines distally, and female with pair of long, sinuous spermathecae.
Distribution: China (Beijing).

***Jingneta jingdong* Wang & Li sp. nov.**
Figures 6, 7, 17

Type material: Holotype ♂ (IZCAS), Jingdong Cave, Heidouyu Village (N40°12', E117°15', elevation ca. 142 m a.s.l.), Huangsongyu Town, Pinggu District, Beijing City, China, 7 January 2012, coll. Zu-Wei Zha and Zhi-Gang Chen. **Paratype** 1♀ (IZCAS), same data as holotype.
Etymology: The specific name is a noun in apposition and refers to the type locality.
Diagnosis: This new species is similar to *J. cornea* and *J. caoxian* **sp. nov.** but can be separated based on shape of sclerites on palpal bulb: prolateral sclerite shoehorn-shaped, and median sclerite cone-shaped (Figure 6B–D) (vs. prolateral sclerite hook-like, median sclerite spine-shaped, tibia with two strong, hook-like spines in *J. cornea*; prolateral sclerite stick-like, median sclerite ribbon-like, distally transparent, and tibia with one strong distal spine in *J. caoxian* **sp. nov.**). Males in *J. jingdong* **sp. nov.** can be separated from all other species of *Jingneta* **gen. nov.** by leaf-shaped, membranous apophysis distally on palpal tibia and spur-shaped embolus.
Description: Male (holotype): Total length 1.23. Prosoma 0.56 long, 0.50 wide. Opisthosoma 0.67 long, 0.46 wide (Figure 6A). Leg measurements: I - (1.47, 0.19, -, -, -); II 3.81 (1.09, 0.18, 1.13, 0.78, 0.63); III 3.04 (0.94, 0.16, 0.78, 0.63, 0.53); IV 4.08 (1.09, 0.17, 1.25, 0.94, 0.63). Prosoma light brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma yellowish, ovoid. Palp as in Figure 6B–D: femur with rows of short spines dorsally and prolaterally; tibia with one leaf-shaped, membranous apophysis distally; cymbium unbranched distally. Bulb with spur-shaped embolus and two sclerites: underdeveloped, cone-shaped median sclerite and transparent retrolateral sclerite.
Female (paratype): Total length 1.92. Prosoma 0.71 long, 0.51 wide. Opisthosoma 1.21 long, 1.28 wide (Figure 5A, B). Leg measurements: I 10.83 (2.88, 0.45, 3.40, 2.56, 1.54); II 10.39 (2.69, 0.45, 3.21, 2.44, 1.60); III 6.22 (1.73, 0.38, 1.67, 1.41, 1.03); IV - (2.50, 0.32, -, -, -). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma yellowish, ovoid. Vulva with pair of sinuous spermathecae and sperm ducts and conspicuous sub-rectangular atrium (Figure 7C).
Distribution: China (Beijing).

***Jingneta maculosa* (Song & Xu, 1986) comb. nov.**
Leptoneta maculosus Song and Xu, 1986: 84, figure 2A–C
Leptoneta maculosa Song, 1987: 101, figure 65; Chen & Zhang, 1991: 56, figure 47.1–3; Song et al., 1999: 50, figure 20N, 21C

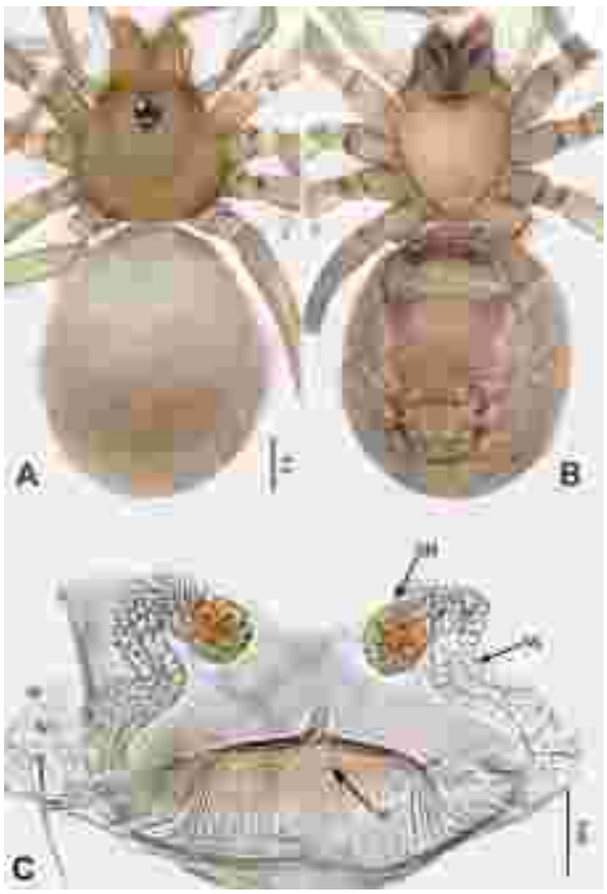

Figure 7 ***Jingneta jingdong* sp. nov., female paratype**
A: Habitus, dorsal view; B: Habitus, ventral view; C: Internal genitalia, dorsal view. At: Atrium; SS: Spermathecae stalk; SH: Spermathecae.

Type material: Holotype ♂ (Huangshan University, Huangshan, China, originally named Huizhou Teachers College, HSU), Qiyun Mountain, Xiuning, Anhui, China, 24–26 October 1983, under stones, coll. Ya-Jun Xu and Lin Wang. **Paratypes** 4♂6♀ (HSU), same data as holotype, not examined.
Description: Male: Eyes six. Chelicerae with 10 promarginal teeth and eight small retromarginal denticles. Abdomen with brown markings. Palpal femur with nine retroventral spines, eight slender dorsal spines, and seven smaller prolateral spines; patella with three short, blunt, curved spines, tibia with one long spine apically.
Female: Similar to male in coloration and general features but legs shorter. Vulva with pair of sinuous spermathecae and sperm ducts. For figures and detailed information, see Song & Xu (1986).
Comments: This species is transferred to *Jingneta* **gen. nov.** based on long femoral spines of male palp, tibia with one distal spine, and vulva with pair of sinuous spermathecae.
Distribution: China (Anhui).

***Jingneta setulifera* (Tong & Li, 2008) comb. nov.**
Leptoneta setulifera Tong & Li, 2008: 380, figure 4A–J

Type material: Holotype ♂ (MNHN), Beipo Cave, Shidu Town (N39°42', E115°37'), Liuhe Village, Fangshan District, Beijing City, China, 11 May 2005, coll. Qian Wang. **Paratypes** 6♂25♀ (IZCAS) and 3♂3♀ (MNHN), same locality as holotype, 5 September 2006, coll. Shu-Qiang Li, Yu-Cheng Lin and Jin-Cheng Liu. All types in IZCAS examined, those in MNHN not examined.
Other material examined: 1♂1♀ (IZCAS), Beipo Cave (N39º42′, E115º37′), Liuhe Village, Shidu Town, Fangshan District, Beijing City, China, 12 May 2011, coll. Chun-Xia Wang.
Description: Male: Eyes six. Chelicerae light brown, with seven promarginal teeth and five small retromarginal denticles. Abdomen oval, brown on dorsum, dark brown laterally and on venter. Palpal femur with many strong spines ventrally, tibia with three long, dorsal trichobothria and one single, hook-like apophysis distolaterally. Cymbium branched distally. Bulb with dark, short embolus, transparent, horn-shaped retrolateral sclerite, and spine-like median sclerite.
Female: Similar to male in color and general features but legs shorter. Vulva with pair of sperm ducts and sinuous spermathecae. For figures and detailed information, see Tong & Li (2008).
Comments: This species is transferred to *Jingneta* **gen. nov.** based on molecular analysis, as well as male palp with strong femoral spines, tibia with one hook-like apophysis distally, and vulva with pair of sinuous spermathecae.
Distribution: China (Beijing).

***Jingneta tunxiensis* (Song & Xu, 1986) comb. nov.**
Leptoneta tunxiensis Song and Xu, 1986: 84, figure 1A–D; Song, 1987: 106, figure 69; Song et al., 1999: 51, figure 20S, 21N, O

Type material: Holotype ♂ (HSU), Tunxi, Anhui, China, 18 December 1983, under stones, coll. Ya-Jun Xu, Wei-Guo He, Wei-Zheng Liu. **Paratypes** 3♂8♀ (HSU), same data as holotype, not examined.
Description: Male: Eyes six. Chelicerae with eight promarginal teeth and six small retromarginal denticles. Palpal femur with seven stout spines retroventrally, patella with three short, blunt, curved spines, tibia with two spines distolaterally, and patella longer than tibia.
Female: Similar to male in color and general features but legs shorter. Vulva with pair of slender sperm ducts and sinuous spermathecae. For figures and detailed information, see Song & Xu (1986).
Comments: This species is transferred to *Jingneta* **gen. nov.** based on male palp with long femoral spines, tibia with two spines distolaterally, and vulva with pair of sinuous spermathecae.
Distribution: China (Anhui).

***Jingneta wangae* (Tong & Li, 2008) comb. nov.**
Leptoneta wangae Tong and Li, 2008: 385, figure 6A–J

Type material: Holotype ♂ (MNHN), Zhizhu Cave, Beizhihe Village, Fangshan District, Xiayunling Town (N39°42', E115°44'), Beijing City, China, 8 March 2005, coll. Qian Wang and Yan-Feng Tong. **Paratypes** 10♂8♀ (IZCAS) and 2♂2♀ (MNHN), same data as holotype. All types in IZCAS examined, those in MNHN not examined.
Other material examined: 1♂1♀ (IZCAS), Zhizhu Cave (N39º42′, E115º44′), Beizhihe Village, Xiayunling Town, Fangshan District, Beijing City, China, 13 May 2011, coll. Chun-Xia Wang.
Description: Male: Eyes six, posterior median eye strongly reduced. Chelicerae light brown, with eight promarginal teeth and five small retromarginal denticles. Abdomen oval, pale yellow, venter brownish, no distinct pattern dorsally. Palpal femur with many long spines ventrally. Tibia with three long trichobothria dorsally and two short, hook-like lateral apophyses distally. Cymbium branched distally. Bulb with dark, short embolus, transparent, horn-shaped retrolateral sclerite, and spine-like median sclerite.
Female: Similar to male in color and general features but legs shorter. Vulva with pair of sinuous spermathecae and sperm ducts. For figures and detailed information, see Tong & Li (2008).
Comments: This species is transferred to *Jingneta* **gen. nov.** based on molecular analysis, as well as male palp with long femoral spines, tibia with two hook-like lateral apophyses distally, and vulva with pair of sinuous spermathecae.
Distribution: China (Beijing).

Genus *Leptonetela* Kratochvíl, 1978
Kratochvíl, 1978: 11

Type species: *Sulcia kanellisi* Deeleman-Reinhold, 1971 from Greece.
Diagnosis and Distribution: See Wang & Li, 2017.

***Leptonetela falcata* (Chen, Gao & Zhu, 2000) comb. nov.**
Leptoneta falcata Chen et al., 2000: 10, figure 1A–F

Type material: Holotype ♂ (Museum of Hebei University, Baoding, China, MHBU), Maolan (N24º30′, E108º00'), Libo County, Guizhou, China, 15 August 1998, coll. Hui-Ming Chen. **Paratype** 1♀ (MHBU), same data as holotype, not examined.
Description: Male: Eyes six. Chelicerae with nine promarginal teeth and no retromarginal teeth. Abdomen yellow, with five yellow brown transverse bands dorsally. Palpal femur lacking spines, tibia with row of seven spines retrolaterally.
Female: Chelicerae with eight promarginal teeth and five retromarginal teeth. Vulva with pair of sperm ducts and strongly twisted spermathecae. For figures and detailed

information, see Chen et al. (2000).
Comments: This species is transferred to *Leptonetela* based on male palpal femur lacking spines, tibia with row of seven spines retrolaterally, and vulva with pair of highly twisted spermathecae.
Distribution: China (Guizhou).

***Leptonetela miaoshiensis* (Chen & Zhang, 1993) comb. nov.**
Leptoneta miaoshiensis Chen & Zhang, 1993: 217, figure 1A–F; Song et al., 1999: 50, figure 20O, 21D, E

Type material: Holotype ♀ (ZMNH), Xianren Cave, Chunan Town, Zhejiang, China, 11 May 1992, coll. Zhao-Ming Pan and Zhang-Fu Chen. **Paratypes** 3♂2♀ (ZMNH), same data as holotype, not examined.
Description: Male: Eyes two, reduced to white spots. Chelicerae with eight small promarginal teeth and seven small retromarginal denticles. Abdomen venter grayish, dorsum with taupe markings. Male palpal femur with setae dorsally and ventrally, tibia with one long retrolateral spine medially, and one long dorsal spine distally.
Female: Similar to male in color and general features but legs shorter. Vulva with pair of sperm ducts and twisted spermathecae. For figures and detailed information, see Chen & Zhang (1993).
Comments: This species is transferred to *Leptonetela* based on male palpal tibia with one long retrolateral spine medially.
Distribution: China (Zhejiang).

***Leptonetela trispinosa* (Yin, Wang & Wang, 1984) comb. nov.**
Leptoneta trispinosa Yin et al., 1984: 364, figure 1a–f; Song, 1987: 105, figure 68; Song et al., 1999: 51, figure 20R, 21L, M; Yin et al., 2012: 157, figure 27a–f

Type material: Holotype ♂ (NHU), Yuelu Mountain, Changsha City, Hunan, China, 15 May 1982, under stones near river, coll. Jia-Fu Wang. **Paratypes** 3♂3♀ (NHU), same data as holotype, not examined.
Description: Male: Eyes six. Chelicerae with nine promarginal teeth and four small retromarginal teeth. Abdomen inverted pear shape, brown. Male palp lacking femoral spines, patella with one short spine distally, base of tibia with row of three strong spines retrolaterally.
Female: Similar to male in color and general features but larger. Vulva with pair of sperm ducts and twisted spermathecae. For figures and detailed information, see Yin et al. (1984).
Comments: This species is transferred to *Leptonetela* based on male palp lacking femoral spines, base of tibia with row of three strong spines retrolaterally, and vulva with pair of highly twisted spermathecae.
Distribution: China (Hunan).

***Leptonetela unispinosa* (Yin, Wang & Wang, 1984) comb. nov.**
Leptoneta unispinosa Yin et al., 1984: 368, figure 3a–d; Song, 1987: 107, figure 70; Song et al., 1999: 51, figure 21P, Q; Yin et al., 2012: 159, figure 28a–d

Type material: Holotype ♂ (NHU), Yuelu Mountain, Changsha City, Hunan, China, December 1980, under leaf litter, coll. Zhi-Tong Wang, not examined.
Description: Male: Eyes six. Chelicerae with seven promarginal teeth and three slender retromarginal teeth. Abdomen oval, light brown. Male palp lacking femoral spines, and base of tibia with one long, strong spine retrolaterally. For figures and detailed information, see Yin et al. (1984).
Female: Unknown.
Comments: This species is transferred to *Leptonetela* based on male palp lacking femoral spines and tibia with one long, strong spine retrolaterally.
Distribution: China (Hunan).

***Leptonetela xui* (Chen, Gao & Zhu, 2000) comb. nov.**

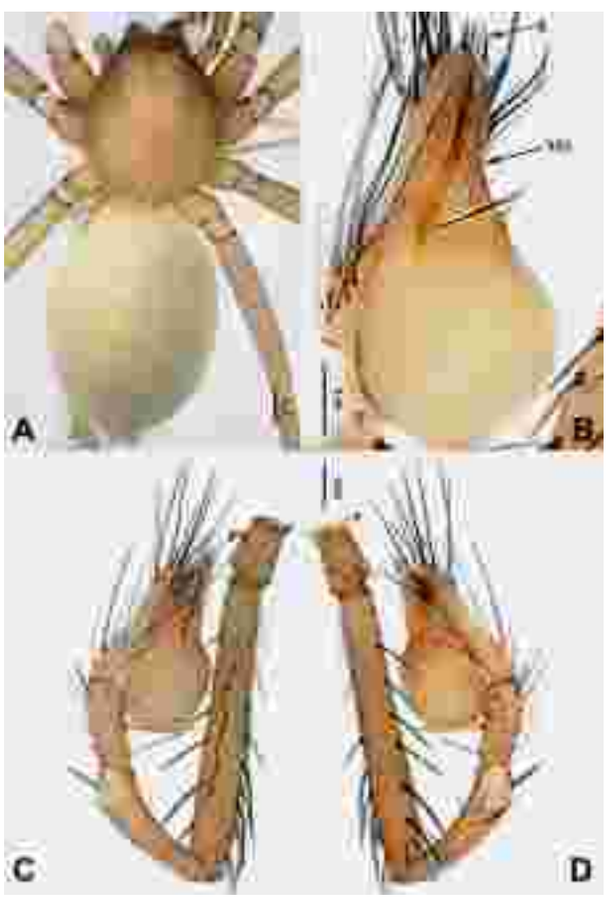

Figure 8 ***Longileptoneta gutan* sp. nov., male holotype**
A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

Leptoneta xui Chen et al., 2000: 10, figure 2A–C

Type material: Holotype ♂ (MHBU), Maolan (N24º30 ′, E108º00'), Libo County, Guizhou, China, 15 August 1998, coll. Hui-Ming Chen. **Paratype** 1♀ (MHBU), same data as holotype, not examined.
Description: Male: Eyes six, reduced to white spots. Chelicerae with nine promarginal teeth and no retromarginal teeth. Abdomen yellow, without markings. Male palpal femur lacking spines, tibia with row of two spines retrolaterally, basal one long, distal one short and slender. For figures and detailed information, see Chen et al. (2000).
Comments: This species is transferred to *Leptonetela* based on male palpal femur lacking spines and tibia with row of two spines retrolaterally.
Distribution: China (Guizhou).

Genus *Longileptoneta* Seo, 2015
Longileptoneta Seo, 2015: 306

Type species: *Longileptoneta songniensis* Seo, 2015 from Korea.
Diagnosis: The genus *Longileptoneta* can be distinguished from *Jingneta* **gen. nov.** and *Masirana* by prolateral distal spur, prolateral curvature of cymbium, and bulb with ribbon-like prolateral and median sclerites; from *Leptoneta*, *Leptonetela*, and *Falcileptoneta* by male palpal femur with rows of strong retrolateral spines; and from *Leptonetela* by vulva with pair of sinuous spermathecae.
Distribution: China, Japan, Korea.

***Longileptoneta gutan* Wang & Li sp. nov.**
Figures 8, 9, 17

Type material: Holotype ♂ (IZCAS), Lianhua Cave, Gutan Town, Wuyuan County (N29°29', E117°36', elevation ca. 352 m a.s.l.), Shangrao City, Jiangxi, China, 20 May 2013, coll. Yu-Fa Luo and Jin-Cheng Liu. **Paratype** 1♀ (IZCAS), same data as holotype.
Etymology: The specific name is a noun in apposition and refers to the type locality.
Diagnosis: This new species is similar to *Longileptoneta gayaensis* and *L. jangseongensis* Seo, 2016 but can be distinguished by absence of eyes, tibia with three spines retrolaterally, and bulb with ribbon-like prolateral and median sclerites (Figure 8B–D) (vs. eyes six, prolateral sclerite of bulb needle-like, and median sclerite shoehorn-shaped in *L. gayaensis*; eyes six, palpal tibia of male with one small apophysis, apophysis tip with one spine, prolateral sclerite of bulb absent, and median sclerite leaf-shaped in *L. jangseongensis*).
Description: Male (holotype): Total length 1.40. Prosoma 0.60 long, 0.51 wide. Opisthosoma 0.80 long, 0.55 wide (Figure 8A). Leg measurements: I 3.53 (0.94, 0.25, 0.99, 0.74, 0.61); II 2.97 (0.88, 0.23, 0.74, 0.62, 0.50); III 2.58 (0.66, 0.19, 0.68, 0.63, 0.42); IV 3.40 (0.98, 0.19, 1.00, 0.81, 0.42).

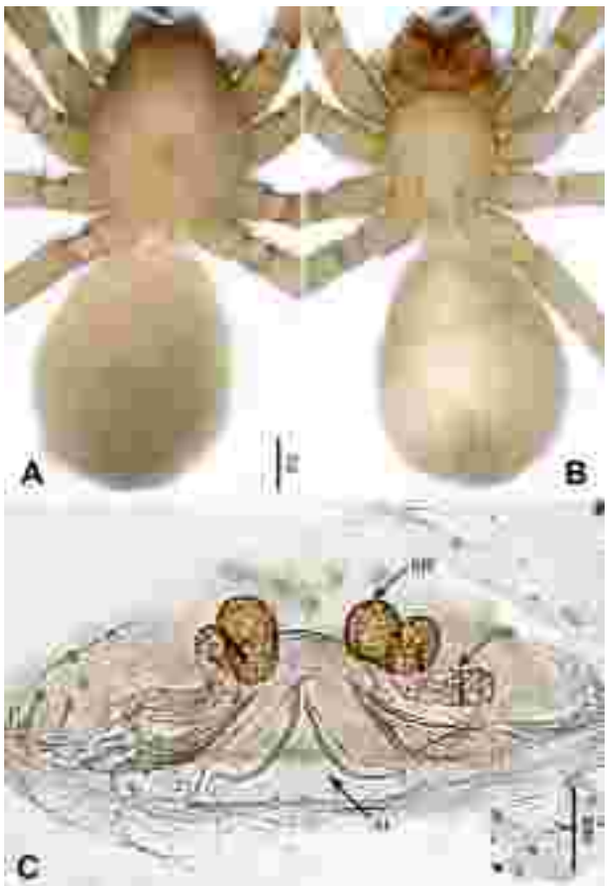

Figure 9 ***Longileptoneta gutan* sp. nov., female paratype**
A: Habitus, dorsal view; B: Habitus, ventral view; C: Internal genitalia, dorsal view. At: Atrium; SS: Spermathecae stalk; SH: Spermathecae.

Prosoma light brown. Eyes absent. Median groove, cervical grooves, and radial furrows indistinct. Clypeus brown and 0.15 high. Opisthosoma light gray, ovoid. Palp as in Figure 8B–D: femur with rows of strong spines retrolaterally; patella with three short spines retrolaterally; tibia with one short, strong spine dorsally and three slender spines ventrally; cymbium with transverse depression medially, distal half bifurcated, with strong spines proximally. Bulb with triangular, transparent embolus and three sclerites: slender, ribbon-like prolateral and median sclerites and transparent retrolateral sclerite, bifurcated terminally.
Female (paratype): Total length 1.47. Prosoma 0.66 long, 0.59 wide. Opisthosoma 0.81 long, 0.72 wide (Figure 9A, B). Leg measurements: I - (1.50, 0.28, -, -, -); II 3.82 (1.13, 0.16, 1.06, 0.72, 0.75); III - (0.91, 0.28, -, -, -); IV - (1.47, 0.22, -, -, -). Prosoma light gray. Eyes absent. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma light gray, ovoid. Vulva with pair of sinuous spermathecae and sperm ducts (Figure 9C).
Distribution: China (Jiangxi).

***Longileptoneta huanglongensis* (Chen, Zhang & Song,**

1982) comb. nov.

Leptoneta huanglongensis Chen et al., 1982: 204, figure 1–3; Hu, 1984: 69, figure 63.1–3; Song, 1987: 100, figure 63; Chen & Zhang, 1991: 57, figure 48.1–3; Song et al., 1999: 50, figure 20L, W

Type material: Holotype ♂ (ZMNH), Huanglong Cave, 4 May 1981, coll. Zhang-Fu Chen. **Paratype** ♀ (ZMNH), same data as holotype, not examined.
Other material examined: 1♂ (IZCAS), Huanglong Cave (N30º15′, E120º13′, elevation ca. 80 m a.s.l.), Hangzhou City, Zhejiang, China, 28 July 2018, coll. Ming-Jie Xu and Zi-Yi Wang.
Description: Male: Eyes six. Abdomen oval, brown. Male palp with short, strong femoral spines; tibia with one long, columnar apophysis distally, tip of apophysis bifid. Bulb with dark, triangular embolus and three sclerites: spine-like prolateral sclerite, wide, cuneiform median sclerite, and transparent retrolateral sclerite.

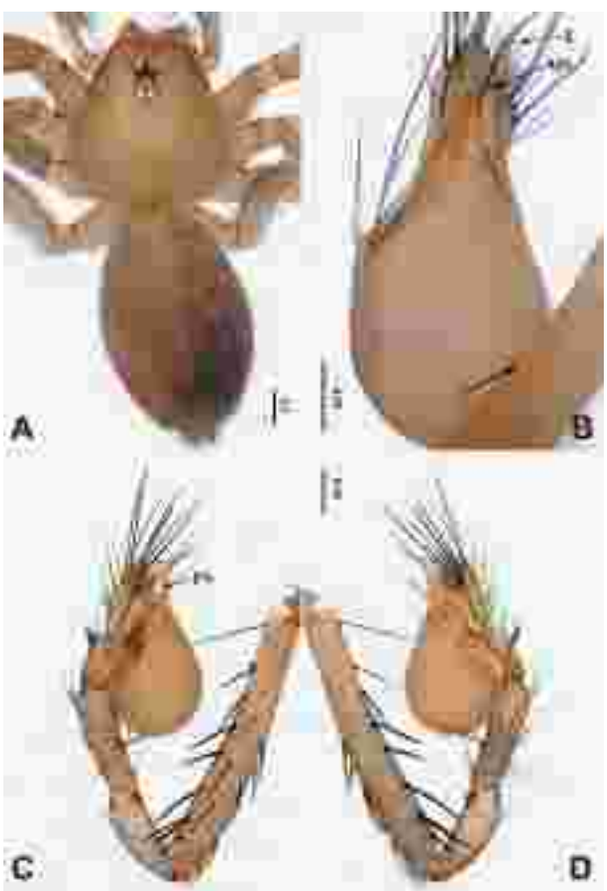

Figure 10 ***Longileptoneta huangshan*** **sp. nov., male holotype**
A: Habitus, dorsal view B: Palpal bulb, ventral view C: Palp, prolateral view D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

Female: Similar to male in color and general features but larger. Vulva with pair of sperm ducts and spermathecae. For figures and detailed information, see Chen et al. (1982).
Comments: This species is transferred to *Longileptoneta* based on male palpal femur with short spines and tibia with one long, columnar apophysis apically, tip of apophysis bifid.
Distribution: China (Zhejiang).

Longileptoneta huangshan **Wang & Li sp. nov.**
Figures 10, 11, 17

Type material: Holotype ♂ (IZCAS), Huangshan Cave, Huangguan Village (N26°29', E115°54', elevation ca. 420 m a.s.l.), Ningdu County, Ganzhou City, Jiangxi, China, 29 April 2013, coll. Yu-Fa Luo and Jin-Cheng Liu. **Paratype** 1♀ (IZCAS), same data as holotype.
Etymology: The specific name is a noun in apposition and refers to the type locality.
Diagnosis: *Longileptoneta huangshan* **sp. nov**. can be separated from all other *Longileptoneta* species by male palpal tibia with one long, curved, columnar apophysis distally,

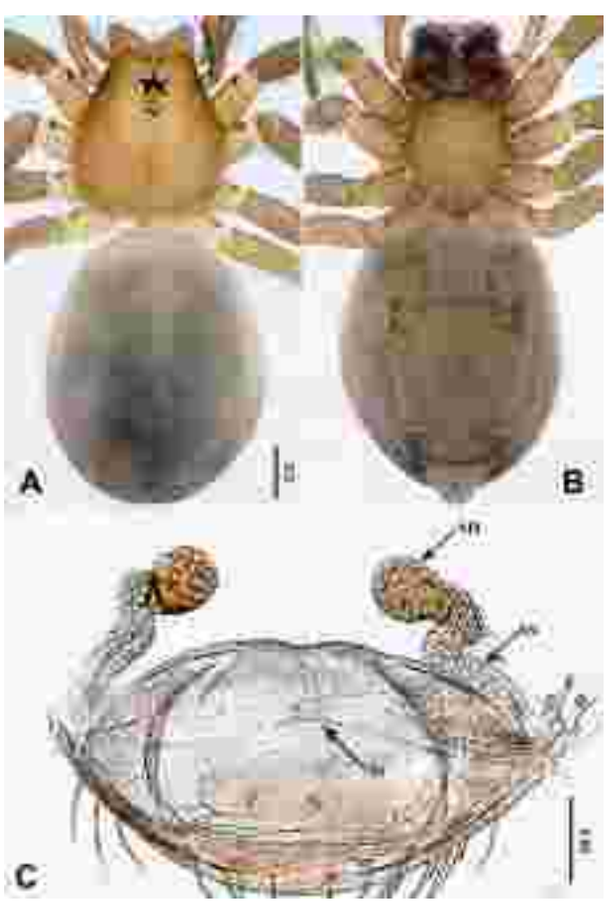

Figure 11 ***Longileptoneta huangshan*** **sp. nov., female paratype**
A: Habitus, dorsal view; B: Habitus, ventral view; C: Internal genitalia, dorsal view. At: Atrium; SS: Spermathecae stalk; SH: Spermathecae.

tip armed with one short spine. This new species is similar to *L. shenxian* **sp. nov.** but can be separated by slender, ribbon-like prolateral and ribbon-like median sclerites of male palpal bulb (Figures 10B, D, 11C) (vs. tibia retrolaterally with one short, columnar apophysis distally, apophysis tip armed with one long, curved spine, and prolateral sclerite bamboo leaf-shaped and median sclerite shovel-shaped, with transparent tip on bulb in *L. shenxian* **sp. nov.**).

Description: Male (holotype): Total length 1.58. Prosoma 0.71 long, 0.51 wide. Opisthosoma 0.82 long, 0.55 wide (Figure 10A). Leg measurements: I 4.78 (1.47, 0.24, 1.45, 1.00, 0.62); II 3.58 (1.14, 0.22, 1.03, 0.68, 0.51); III 3.04 (0.96, 0.22, 0.87, 0.54, 0.45); IV 4.09 (1.28, 0.23, 1.18, 0.85, 0.55). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma dark brown, ovoid. Palp as in Figure 10B–D: femur with rows of strong spines; tibia with one long, curved, columnar apophysis distally, apophysis tip with one short spine; cymbium with transverse depression medially, distally bifurcated, with strong spines. Bulb with triangular, transparent embolus and three sclerites: prolateral and median sclerites slender and ribbon-like, and retrolateral sclerite transparent.

Female (paratype): Total length 2.34. Prosoma 0.94 long, 0.91 wide. Opisthosoma 1.40 long, 1.31 wide (Figure 11A, B). Leg measurements: I 8.43 (2.25, 0.31, 2.59, 2.03, 1.25); II 6.35 (1.69, 0.31, 1.88, 1.41, 1.06); III 5.10 (1.44, 0.28, 1.41, 1.19, 0.78); IV 6.75 (1.88, 0.28, 2.03, 1.59, 0.97). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma dark gray, ovoid. Vulva with pair of sinuous, tube-shaped spermathecae and sperm ducts, atrium ovoid. (Figure 11C).

Distribution: China (Jiangxi).

***Longileptoneta shenxian* Wang & Li sp. nov.**

Figures 12, 13, 17

Type material: Holotype ♂ (IZCAS), Shenxian Cave, Jiaoshan Village (N30°23', E118°14', elevation ca. 327 m a.s.l.), Huangshan City, Anhui, China, 21 October 2013, coll. Shu-Qiang Li. **Paratype** 1♀ (IZCAS), same data as holotype.

Etymology: The specific name is a noun in apposition and

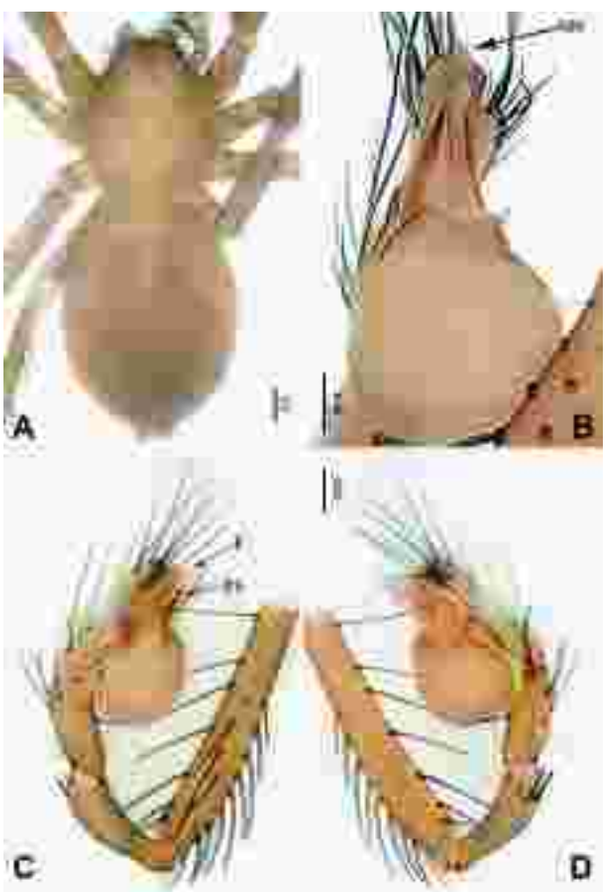

Figure 12 ***Longileptoneta shenxian*** **sp. nov., male holotype**
A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

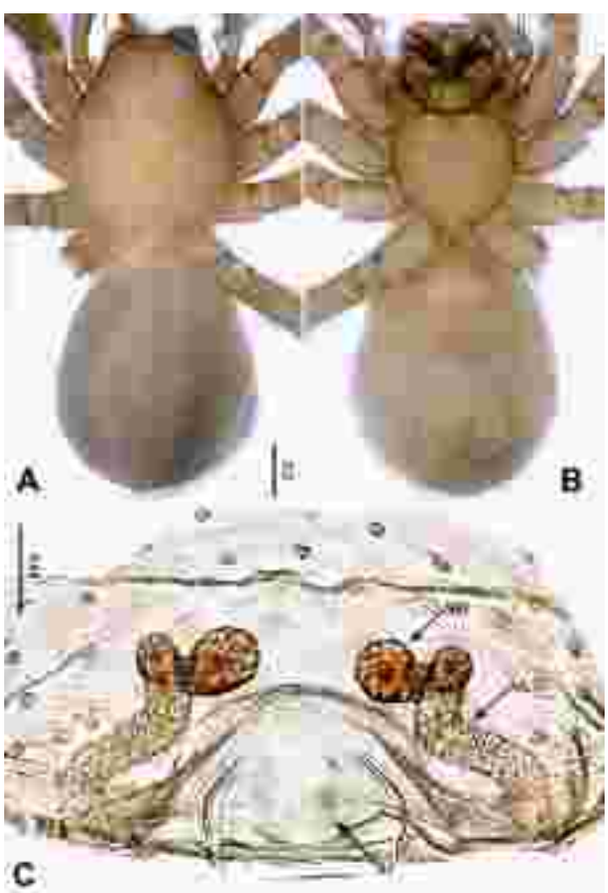

Figure 13 ***Longileptoneta shenxian*** **sp. nov., female paratype**
A: Habitus, dorsal view; B: Habitus, ventral view; C: Internal genitalia, dorsal view. At: Atrium; SS: Spermathecae stalk; SH: Spermathecae.

refers to the type locality.

Diagnosis: *Longileptoneta shenxian* **sp. nov**., can be separated from all other *Longileptoneta* species by male palpal tibia retrolaterally with one columnar apophysis distally, apophysis tip armed with one long, curved spine, and patella retrolaterally with two spines distally. This new species is similar to *L. huangshan* **sp. nov**. but can be distinguished based on certain characters (see diagnosis for *L. huangshan* **sp. nov**.).

Description: Male (holotype): Total length 2.24. Prosoma 0.96 long, 0.83 wide. Opisthosoma 1.28 long, 0.96 wide (Figure 12A). Leg measurements: I 9.35 (2.56, 0.32, 2.88, 2.24, 1.35); II 7.57 (2.31, 0.26, 2.24, 1.67, 1.09); III 6.54 (1.67, 0.32, 1.99, 1.47, 1.09); IV 8.20 (2.44, 0.38, 2.31, 1.92, 1.15). Prosoma brown. Eyes absent. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma light brown, ovoid. Palp as in Figure 12B–D: femur with many strong spines; patella with two strong spines retrolaterally; tibia with one columnar apophysis distally, apophysis tip armed with one long, curved spine; cymbium with slight transverse depression medially, bifurcate distally, with strong spines. Bulb with three sclerites: bamboo leaf-shaped prolateral sclerite, shovel-shaped median sclerite with transparent tip, and transparent retrolateral sclerite.

Female (paratype): Total length 2.31. Prosoma 0.96 long, 0.94 wide. Opisthosoma 1.35 long, 0.96 wide (Figure 13A, B). Leg measurements: I 9.32 (2.66, 0.41, 2.81, 2.19, 1.25); II - (2.09, 0.31, 2.19, 1.34, -); III 6.10 (1.72, 0.31, 1.69, 1.44, 0.94); IV 8.27 (2.44, 0.28, 2.48, 1.88, 1.19). Prosoma brown. Eyes absent. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma light brown, ovoid. Vulva with pair of sinuous, tube-shaped spermathecae and sperm ducts, atrium semi-circular (Figure 13C).

Distribution: China (Anhui).

***Longileptoneta yeren* Wang & Li sp. nov.**

Figures 14, 17

Type material: Holotype ♂ (IZCAS), Yeren Cave, Daping Village (N25°39', E115°12', elevation ca. 602 m a.s.l.), Gan

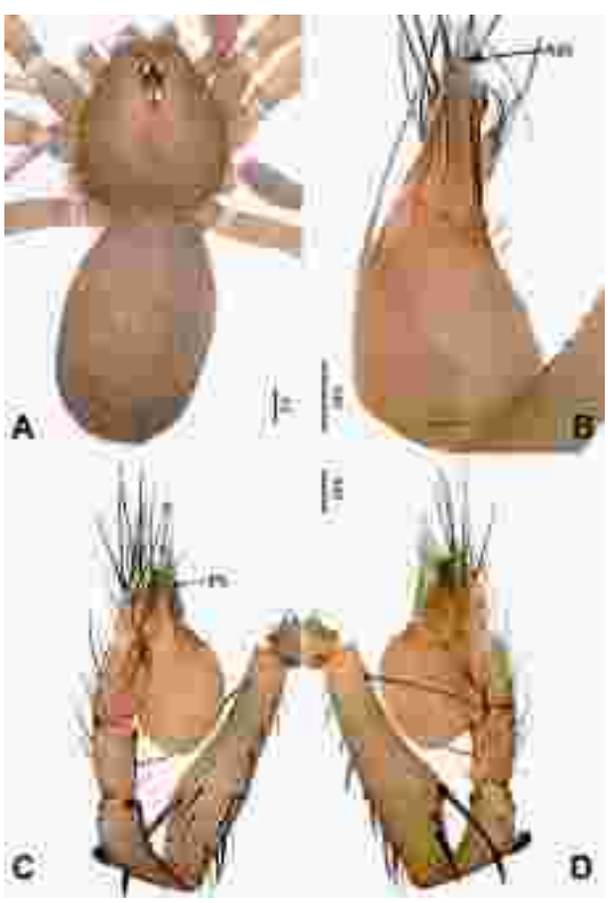

Figure 14 ***Longileptoneta yeren*** **sp. nov., male holotype**

A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

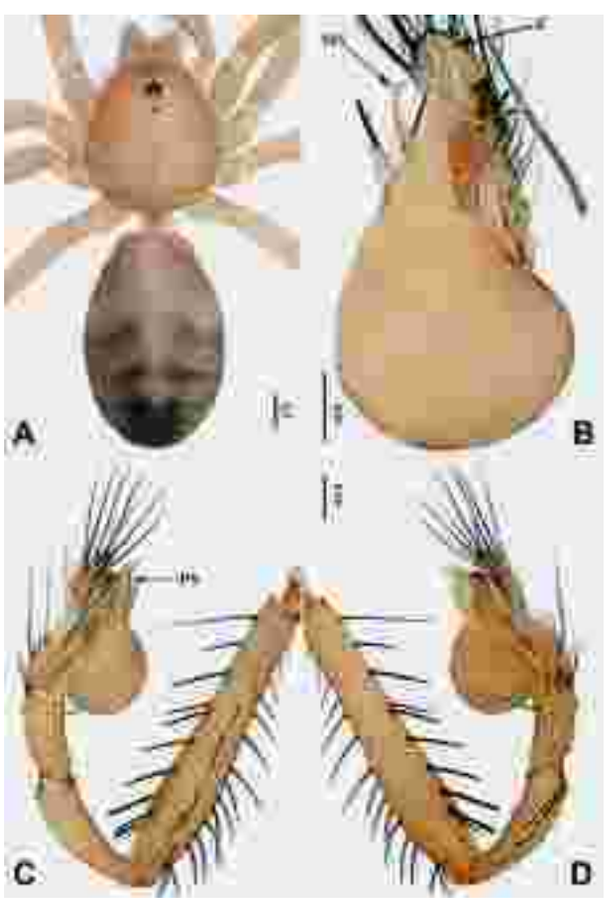

Figure 15 ***Longileptoneta zhuxian*** **sp. nov., male holotype**

A: Habitus, dorsal view; B: Palpal bulb, ventral view; C: Palp, prolateral view; D: Palp, retrolateral view. PS: Prolateral sclerite; E: Embolus; MS: Median sclerite.

County, Ganzhou City, Jiangxi, China, 21 September 2013, coll. Yu-Fa Luo and Jin-Cheng Liu. **Paratype** 1♂ (IZCAS), same data as holotype.

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

Diagnosis: *Longileptoneta yeren* **sp. nov**. can be separated from all other *Longileptoneta* species by femur with one hump ventrally, bearing row of four strong spines, basal one longest, tip curved, patella with one comb-shaped apophysis dorsally, bearing 10 teeth; tibia with one small apophysis distally, apophysis tip armed with one slender spine.

Description: Male (holotype): Total length 1.75. Prosoma 0.69 long, 0.69 wide. Opisthosoma 1.06 long, 0.72 wide (Figure 14A). Leg measurements: I 5.63 (1.56, 0.19, 1.75, 1.25, 0.88); II 4.20 (1.16, 0.22, 1.25, 0.88, 0.69); III 3.71 (1.06, 0.22, 1.03, 0.81, 0.59); IV 4.91 (1.38, 0.25, 1.44, 1.06, 0.78). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma brown, ovoid. Palp as in Figure 14B–D: femur with row of spines dorsally, and one hump ventrally, bearing row of four strong spines, basal one longest, tip curved; patella with one comb-shape apophysis dorsally, bearing 10 teeth; tibia with two slender spines dorsally, one long, slender ventral spine medially, and one small apophysis distally, apophysis armed with one slender spine; cymbium with weak medial transverse depression, distally bifurcate, armed with strong spines. Bulb with triangular, transparent embolus and three sclerites: prolateral and median sclerites slender and bamboo-leaf shaped, and transparent retrolateral sclerite.

Female: Unknown.

Distribution: China (Jiangxi).

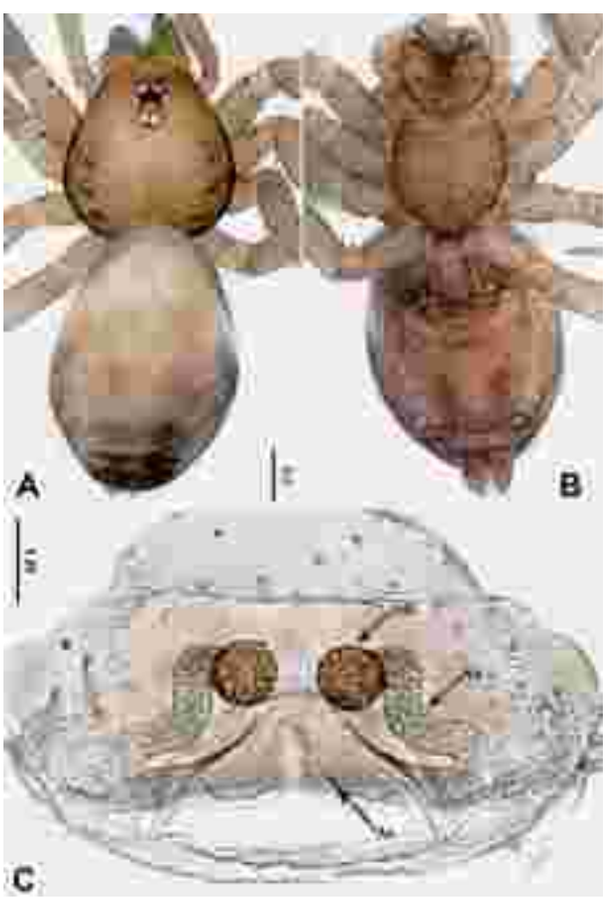

Figure 16 ***Longileptoneta zhuxian*** **sp. nov., female paratype**
A: Habitus, dorsal view; B: Habitus, ventral view; C: Internal genitalia, dorsal view. At: Atrium; SS: Spermathecae stalk; SH: Spermathecae.

Longileptoneta zhuxian **Wang & Li sp. nov.**
Figures 15–17

Type material: Holotype ♂ (IZCAS), Zhuxian Cave, Shouan Town (N29°12', E117°18', elevation ca. 191 m a.s.l.), Jingdezhen City, Jiangxi, China, 23 May 2013, coll. Yu-Fa Luo and Jin-Cheng Liu. **Paratype** 1♀ (IZCAS), same data as holotype.

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

Diagnosis: This new species is similar to *L. gachangensis* Seo, 2016 and *L. gayaensis* but can be separated by male palpal patella with row of slender spines retrolaterally and tibia with two slender retrolateral spines apically; prolateral sclerite bamboo leaf-shaped, and median sclerite ribbon-like (Figure 15B, D) (vs. palpal femur of male with row of tiny, hooked spines retrolaterally, patella with one dorsal spine distally in *L. gachangensis*; prolateral sclerite needle-like, and median sclerite shoehorn-shaped in *L. gayaensis*).

Description: Male (holotype): Total length 1.48. Prosoma 0.69 long, 0.52 wide. Opisthosoma 0.78 long, 0.63 wide (Figure 15A). Leg measurements: I 4.86 (1.44, 0.23, 1.52, 1.00, 0.67); II 4.24 (1.24, 0.23, 1.25, 0.91, 0.60); III 3.20 (1.00, 0.21, 0.88, 0.61, 0.50); IV 4.50 (1.35, 0.23, 1.36, 0.93, 0.63). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma dark brown, ovoid. Palp as in Figure 15B–D: femur with rows of strong spines ventrally and dorsally, ventral spines blunt; patella with row of short spines retrolaterally; tibia with three retrolateral spines distally; transverse depression of cymbium indistinct, cymbium distally slightly bifurcate, with strong spines. Bulb with triangular, transparent embolus and three sclerites: bamboo leaf-shaped prolateral sclerite, ribbon-like median sclerite, and slender, quadrangular, transparent retrolateral sclerite.

Female (paratype): Total length 2.31. Prosoma 1.12 long, 0.84 wide. Opisthosoma 1.19 long, 0.88 wide (Figure 16A, B). Leg measurements: I - (2.19, 0.25, -, -, -); II 5.78 (1.59, 0.34, 1.63, 1.25, 0.97); III 4.66 (1.38, 0.25, 1.28, 0.94, 0.81); IV - (1.84, 0.31, -, -, -). Prosoma brown. Eyes six. Median groove, cervical grooves, and radial furrows distinct. Opisthosoma dark brown, ovoid. Vulva with pair of sinuous spermathecae and sperm ducts (Figure 16C).

Distribution: China (Jiangxi).

Genus ***Masirana*** **Kishida, 1942**

Figure 17 Distribution records of eight new species in Leptonetidae from China

1: *Falcileptoneta shuanglong* **sp. nov**.; 2: *Falcileptoneta yeren* **sp. nov**.; 3: *Longileptoneta gutan* **sp. nov**.; 4: *Longileptoneta huangshan* **sp. nov**.; 5: *Longileptoneta shenxian* **sp. nov**.; 6: *Longileptoneta zhuxian* **sp. nov**.; 7: *Jingneta caoxian* **sp. nov**.; 8: *Jingneta jingdong* **sp. nov**.

Masirana Kishida, in Komatsu, 1942: 57

Type species: *Masirana cinevacea* Kishida, 1942 from Japan.
Diagnosis and Distribution. See Irie & Ono, 2009.

***Masirana changlini* (Zhu & Tso, 2002) comb. nov.**
Leptoneta changlini Zhu & Tso, 2002: 563, figure 1–5, 18, 19

Type material: Holotype ♂ (NMNS-THU), Huisun Experimental Forest Station, Nantou County, Taiwan, China, April 1998, coll. Hai-Yin Wu. **Paratypes** 3 ♂ (NMNS-THU), same locality as holotype but collected at December 1997 and April 1998, coll. Hai-Yin Wu, not examined.
Description: Male: Eyes six. Chelicerae light yellow brown, fang furrow with seven promarginal teeth and six retrolateral teeth. Abdomen oval, light yellow, with light brown setae, dorsum with four light black brown transverse folds. Palpal femur and tibia with many long spines dorsally and ventrally, tibia with two apophyses distally, one leaf-like, one horn-shaped. For figures and detailed information, see Zhu & Tso (2002).
Female: Unknown.
Comments: This species is transferred to *Masirana* based on male palpal femur with long spines and tibia with two apophyses distally, one leaf-shaped, one horn-shaped.
Distribution: China (Taiwan).

DISCUSSION

The type species of the genera *Masirana* and *Falcileptoneta* were not included in our molecular analyses. The genera *Masirana*, *Longileptoneta*, and *Falcileptoneta* were not monophyletic based on either ML or BI analyses. Thus, additional material is needed to make a complete revision of Asian leptonetids.

Before the current study, 22 species of the spider family Leptonetidae from China had been assigned to the genus *Leptoneta*. Based on comparative morphology and molecular phylogenetic analysis, eight species are transferred to *Falcileptoneta*, seven species are transferred to *Jingneta* **gen. nov**., one species is transferred to *Longileptoneta*, one species is transferred to *Masirana*, and five species are transferred to *Leptonetela*. Including the eight new species reported in this paper, there are six genera containing 127 leptonetid species from China. A checklist of Leptonetidae in China follows below. For a complete list of taxonomic references, see WSC (2020).

Genus *Falcileptoneta* Komatsu, 1970
1. *Falcileptoneta anocellata* (Chen, Zhang & Song, 1986) **comb. nov.**
2. *Falcileptoneta arquata* (Song & Kim, 1991) **comb. nov.**
3. *Falcileptoneta huisunica* (Zhu & Tso, 2002) **comb. nov.**
4. *Falcileptoneta lingqiensis* (Chen, Shen & Gao, 1984) **comb. nov.**
5. *Falcileptoneta monodactyla* (Yin, Wang & Wang, 1984) **comb. nov.**
6. *Falcileptoneta nigrabdomina* (Zhu & Tso, 2002) **comb. nov.**
7. *Falcileptoneta shuanglong* Wang & Li **sp. nov.**
8. *Falcileptoneta taiwanensis* (Zhu & Tso, 2002) **comb. nov.**
9. *Falcileptoneta taizhensis* (Chen & Zhang, 1993) **comb. nov.**

Genus *Jingneta*, gen. nov.
10. *Jingneta caoxian* Wang & Li **sp. nov.**

11. *Jingneta cornea* (Tong & Li, 2008) **comb. nov.**
12. *Jingneta exilocula* (Tong & Li, 2008) **comb. nov.**
13. *Jingneta foliiformis* (Tong & Li, 2008) **comb. nov.**
14. *Jingneta jingdong* Wang & Li **sp. nov.**
15. *Jingneta maculosa* (Song & Xu, 1986) **comb. nov.**
16. *Jingneta setulifera* (Tong & Li, 2008) **comb. nov.**
17. *Jingneta tunxiensis* (Song & Xu, 1986) **comb. nov.**
18. *Jingneta wangae* (Tong & Li, 2008) **comb. nov.**

Genus *Leptonetela* Kratochvíl, 1978

19. *Leptonetela anshun* Lin & Li, 2010
20. *Leptonetela bama* Lin & Li, 2010
21. *Leptonetela biocellata* He, Liu, Xu, Yin & Peng, 2019
22. *Leptonetela chakou* Wang & Li, 2017
23. *Leptonetela changtu* Wang & Li, 2017
24. *Leptonetela chenjia* Wang & Li, 2017
25. *Leptonetela chuan* Wang & Li, 2017
26. *Leptonetela curvispinosa* Lin & Li, 2010
27. *Leptonetela dabian* Wang & Li, 2017
28. *Leptonetela danxia* Lin & Li, 2010
29. *Leptonetela dao* Wang & Li, 2017
30. *Leptonetela dashui* Wang & Li, 2017
31. *Leptonetela digitata* Lin & Li, 2010
32. *Leptonetela encun* Wang & Li, 2017
33. *Leptonetela erlong* Wang & Li, 2017
34. *Leptonetela falcata* (Chen, Gao & Zhu, 2000) **comb. nov.**
35. *Leptonetela feilong* Wang & Li, 2017
36. *Leptonetela flabellaris* Wang & Li, 2011
37. *Leptonetela furcaspina* Lin & Li, 2010
38. *Leptonetela gang* Wang & Li, 2017
39. *Leptonetela geminispina* Lin & Li, 2010
40. *Leptonetela gigachela* (Lin & Li, 2010)
41. *Leptonetela grandispina* Lin & Li, 2010
42. *Leptonetela gubin* Wang & Li, 2017
43. *Leptonetela hamata* Lin & Li, 2010
44. *Leptonetela hangzhouensis* (Chen, Shen & Gao, 1984)
45. *Leptonetela hexacantha* Lin & Li, 2010
46. *Leptonetela huoyan* Wang & Li, 2017
47. *Leptonetela identica* (Chen, Jia & Wang, 2010)
48. *Leptonetela jiahe* Wang & Li, 2017
49. *Leptonetela jinsha* Lin & Li, 2010
50. *Leptonetela jiulong* Lin & Li, 2010
51. *Leptonetela kangsa* Wang & Li, 2017
52. *Leptonetela la* Wang & Li, 2017
53. *Leptonetela langdong* Wang & Li, 2017
54. *Leptonetela latapicalis* He, Liu, Xu, Yin & Peng, 2019
55. *Leptonetela liangfeng* Wang & Li, 2017
56. *Leptonetela lianhua* Wang & Li, 2017
57. *Leptonetela lihu* Wang & Li, 2017
58. *Leptonetela lineata* Wang & Li, 2011
59. *Leptonetela liping* Lin & Li, 2010
60. *Leptonetela liuguan* Wang & Li, 2017
61. *Leptonetela liuzhai* Wang & Li, 2017
62. *Leptonetela longli* Wang & Li, 2017
63. *Leptonetela longyu* Wang & Li, 2017
64. *Leptonetela lophacantha* (Chen, Jia & Wang, 2010)
65. *Leptonetela lujia* Wang & Li, 2017
66. *Leptonetela maxillacostata* Lin & Li, 2010
67. *Leptonetela mayang* Wang & Li, 2017
68. *Leptonetela megaloda* (Chen, Jia & Wang, 2010)
69. *Leptonetela meitan* Lin & Li, 2010
70. *Leptonetela meiwang* Wang & Li, 2017
71. *Leptonetela mengzongensis* Wang & Li, 2011
72. *Leptonetela miaoshiensis* (Chen & Zhang, 1993) **comb. nov.**
73. *Leptonetela microdonta* (Xu & Song, 1983)
74. *Leptonetela mita* Wang & Li, 2011
75. *Leptonetela nanmu* Wang & Li, 2017
76. *Leptonetela niubizi* Wang & Li, 2017
77. *Leptonetela notabilis* (Lin & Li, 2010)
78. *Leptonetela nuda* (Chen, Jia & Wang, 2010)
79. *Leptonetela oktocantha* Lin & Li, 2010
80. *Leptonetela palmata* Lin & Li, 2010
81. *Leptonetela panbao* Wang & Li, 2017
82. *Leptonetela parlonga* Wang & Li, 2011
83. *Leptonetela pentakis* Lin & Li, 2010
84. *Leptonetela qiangdao* Wang & Li, 2017
85. *Leptonetela quinquespinata* (Chen & Zhu, 2008)
86. *Leptonetela reticulopecta* Lin & Li, 2010
87. *Leptonetela robustispina* (Chen, Jia & Wang, 2010)
88. *Leptonetela rudicula* Wang & Li, 2011
89. *Leptonetela rudong* Wang & Li, 2017
90. *Leptonetela sanchahe* Wang & Li, 2017
91. *Leptonetela sanyan* Wang & Li, 2017
92. *Leptonetela sexdentata* Wang & Li, 2011
93. *Leptonetela sexdigiti* (Lin & Li, 2010)
94. *Leptonetela shanji* Wang & Li, 2017
95. *Leptonetela shibingensis* Guo, Yu & Chen, 2016
96. *Leptonetela shicheng* Wang & Li, 2017
97. *Leptonetela shuang* Wang & Li, 2017
98. *Leptonetela shuilian* Wang & Li, 2017
99. *Leptonetela suae* Lin & Li, 2010
100. *Leptonetela tangi* He, Liu, Xu, Yin & Peng, 2019
101. *Leptonetela tawo* Wang & Li, 2017
102. *Leptonetela tetracantha* Lin & Li, 2010
103. *Leptonetela tiankeng* Wang & Li, 2017
104. *Leptonetela tianxinensis* (Tong & Li, 2008)
105. *Leptonetela tianxingensis* Wang & Li, 2011
106. *Leptonetela tongzi* Lin & Li, 2010
107. *Leptonetela trispinosa* (Yin, Wang & Wang, 1984) **comb. nov.**
108. *Leptonetela unispinosa* (Yin, Wang & Wang, 1984) **comb. nov.**
109. *Leptonetela wangjia* Wang & Li, 2017
110. *Leptonetela wenzhu* Wang & Li, 2017
111. *Leptonetela wuming* Wang & Li, 2017
112. *Leptonetela xianren* Wang & Li, 2017
113. *Leptonetela xiaoyan* Wang & Li, 2017
114. *Leptonetela xinhua* Wang & Li, 2017
115. *Leptonetela xui* (Chen, Gao & Zhu, 2000) **comb. nov.**
116. *Leptonetela yangi* Lin & Li, 2010
117. *Leptonetela yaoi* Wang & Li, 2011

118. *Leptonetela zakou* Wang & Li, 2017
119. *Leptonetela zhai* Wang & Li, 2011

Genus *Longileptoneta* Seo, 2015
120. *Longileptoneta gutan* Wang & Li **sp. nov.**
121. *Longileptoneta huanglongensis* (Chen, Zhang & Song, 1982) **comb. nov.**
122. *Longileptoneta huangshan* Wang & Li **sp. nov.**
123. *Longileptoneta shenxian* Wang & Li **sp. nov.**
124. *Longileptoneta yeren* Wang & Li **sp. nov.**
125. *Longileptoneta zhuxian* Wang & Li **sp. nov.**

Genus *Masirana* Kishida, 1942
126. *Masirana changlini* (Zhu & Tso, 2002) **comb. nov.**

Genus *Rhyssoleptoneta* Tong & Li, 2007
127. *Rhyssoleptoneta latitarsa* Tong & Li, 2007

NOMENCLTURAL ACTS REGISTRATION

The electronic version of this article in portable document format represents a published work according to the International Commission on Zoological Nomenclature (ICZN), and hence the new names contained in the electronic version are effectively published under that Code from the electronic edition alone (see Articles 8.5, 8.6 of the Code). This published work and the nomenclatural acts it contains have been registered in ZooBank, the online registration system for the ICZN. The ZooBank LSIDs (Life Science Identifiers) can be resolved and the associated information can be viewed through any standard web browser by appending the LSID to the prefixhttp://zoobank.org/
Publication LSID: urn:lsid:zoobank.org:pub:A1D40E72-98FA-465D-8686-CE7AF0ADF154
Falcileptoneta shuanglong LSID: urn:lsid:zoobank.org:act:3BBBC270-3E09-49D0-B5F5-91E89528A74A
Jingneta LSID: urn:lsid:zoobank.org:act:C74764A4-5915-4C6E-8490-6808276AA27A
Jingneta caoxian LSID: urn:lsid:zoobank.org:act:1BE9F7AE-457B-4F2B-98E3-33369A82FF45
Jingneta jingdong LSID: urn:lsid:zoobank.org:act:D82DEC63-E4C0-4D4F-BAEA-CCFE6DD41944
Longileptoneta gutan LSID: urn:lsid:zoobank.org:act:428F5FB9-C701-4E40-87DD-0CF5B6FC47E4
Longileptoneta huangshan LSID: urn:lsid:zoobank.org:act:C34F9D4E-DA0E-4468-BFC1-BC69FBC0A684
Longileptoneta shenxian LSID: urn:lsid:zoobank.org:act:1A172704-9841-46F1-A001-415F34105739
Longileptoneta yeren LSID: urn:lsid:zoobank.org:act:562929A0-F7F5-4100-9E5F-47540DD180EF
Longileptoneta zhuxian LSID: urn:lsid:zoobank.org:act:CCC5B91A-5604-4488-8087-A257B67E57A6

SCIENTIFIC FIELD SURVEY PERMISSION INFORMATION

Permission for field surveys in Anhui, Beijing, Hebei, Jiangxi, and Zhejiang was granted by the National Forestry and Grassland Administration.

SUPPLEMENTARY DATA

Supplementary data to this article can be found online.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

S.Q.L. designed the study. C.X.W. performed molecular experiments and data analyses. C.X.W. and W.H.Z. performed morphological experiments. C.X.W., S.Q.L., and W.H.Z. wrote the manuscript. S.Q.L. revised the manuscript. All authors read and approved the final version of the manuscript.

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