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On some Linyphiidae of China, mainly from Taibai Shan, Qinling Mountains, Shaanxi Province (Arachnida: Araneae)

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Abstract

The collection of Prof. J. Martens and, in part, of Dr P. Jäger, mainly from Taibai Shan, Qinling Mountains, Shaanxi Province, China, contains 36 identifiable species of Linyphiidae. Among these, the following nine new species belong to known genera: *Agyneta martensi* **sp. n.**, *Arcuphantes chinensis* **sp. n.**, *Indophantes ramosus* **sp. n.**, *Mughiphantes beishanensis* **sp. n.**, *M. jaegeri* **sp. n.**, *M. martensi* **sp. n.**, *Nippononeta sinica* **sp. n.**, *Asthenargus conicus* **sp. n.**, and *Dicymbium sinofacetum* **sp. n.** Each of the remaining five new species warrants the erection of a new genus: *Houshenzinus* **gen. n.** (type species: *Houshenzinus rimosus* **sp. n.**), *Shaanxinus* **gen. n.** (type species: *Shaanxinus rufipes* **sp. n.**), *Shanus* **gen. n.** (type species: *Shanus taibaiensis* **sp. n.**), *Taibainus* **gen. n.** (type species: *Taibainus shanensis* **sp. n.**) and *Taibaishanus* **gen. n.** (type species: *Taibaishanus elegans* **sp. n.**). The following new synonym and combinations are proposed (valid names on the right): *Gnathonarium cambridgei* Schenkel 1963 = *Gnathonarium taczanowskii* (O. Pickard-Cambridge 1873) **syn. n**., *Araeoncus stigmosus* Xia, Zhang, Gao, Fei, Rui & Kim 2001 = *Tibioploides stigmosus* (Xia, Zhang, Gao, Fei, Rui & Kim 2001) **comb. n.**, *Walckenaeria anguilliformis* Xia, Zhang, Gao, Fei, Rui & Kim 2001 = *Shaanxinus anguilliformis* (Xia, Zhang, Gao, Fei, Rui & Kim, 2001) **comb. n.**, and *Lepthyphantes huangyuanensis* Zhu & Li 1983 = *Tchatkalophantes huangyuanensis* (Zhu & Li 1983) **comb. n.** The female of *Tibioploides stigmosus* **comb. n.** is described for the first time.

Key words: Spiders, taxonomy, new genera, new species

Introduction

At present the Linyphiidae fauna of China comprises 108 species of the subfamily Erigoninae, 90 species of Micronetinae, 74 species of Linyphiinae and 3 species of Stemonyphantinae (Tanasevitch 2006). So a total of about 275 species of Linyphiidae have hitherto been recorded in China. There is no doubt that this figure represents but a small

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fraction of the true diversity of these spiders populating such a vast and physiographically heterogeneous country. Some of the records seem to be misidentifications and thus require verification, e.g., *Agyneta cauta* (O. Pickard-Cambridge 1902), *A. rurestris* (C. L. Koch 1836), *A. subtilis* (O. Pickard-Cambridge 1863), *Maro sublestus* Falconer 1915, *Obscuriphantes obscurus* (Blackwall 1841), *Palliduphantes pallidus* (O. Pickard-Cambridge 1871), *Pseudomaro aenigmaticus* Denis 1966, *Stemonyphantes lineatus* (Linnaeus 1758), *Syedra gracilis* (Menge 1866), and *Tenuiphantes tenebricola* (Wider 1834).

Treating material from China is often very difficult, for several reasons. The original descriptions of new taxa, especially old ones, were usually provided with insufficient illustrations and published in Chinese, sometimes even without a summary in any European language. Since many species had originally been assigned to incorrect genera, the descriptions and figures of all of the Linyphiidae of the Chinese and neighbouring faunas had to be rechecked to determine a species. In addition, as many local taxa were certainly or possibly misidentified, usually based on the use of European guides, it is often impossible to define the real distribution of such species or genera.

Only very recently publications by Chinese authors have appeared both in English and containing splendid pictures. Most importantly, some of these publications are revisions and/or reviews (Tu & Li 2003, 2004, Tu *et al.* 2005). This trend should improve the situation concerning our knowledge of the Linyphiidae fauna of China.

The present paper is devoted to the study of the linyphiids collected in three provinces of central China. Unfortunately, as the material is often scanty, some taxa are described from the male sex alone. This has sometimes resulted in failure to reveal any closely related taxa. Thus, most of the new genera described below are characterised by an extremely complex palpal structure that shows no similarities among Palaearctic forms. Coupled with certain peculiar somatic traits (head elevation, chaetotaxy etc.), the taxonomic position of these new genera remains unclear.

Some of the material studied is therefore left undetermined because of the above reasons.

Material and methods

This paper is based mainly on the material collected by Prof. Jochen Martens (Mainz, Germany) and Dr Peter Jäger (Frankfurt/M., Germany) in 1997 from Taibai Shan, Qinling Mountains, Shaanxi Province, China. A few additional specimens treated here were taken by Prof. Martens in the Bei Shan National Park and at Koko Nor Lake, Quinghai Province in 1996, as well as at Omei Shan, Sichuan Province in 1998.

The holotypes and the majority of the paratypes have been deposited in the Senckenberg Museum, Frankfurt/M., Germany; some duplicates, both para- and non-types, are in the collection of the Zoological Museum of the Moscow State University,

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Moscow, Russia.

In the descriptions, chaetotaxy in Erigoninae is given by the following formula: 2.2.2.1, which refers to the number of dorsal spines on tibiae I–IV, respectively; in Micronetinae as follows: Ti I: 2-1-1-2(1), which means that tibia I has two dorsal, one pro- and one retrolateral spine, and two or one ventral spine (the apical spines are herewith disregarded). The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. Scale lines in figures = 0.1 mm, unless otherwise indicated.

The nomenclature of the Micronetinae genitalic structures is given after Helsdingen (1965) and Saaristo & Tanasevitch (1996, 1999, 2000, 2003); some of the structural names in the Erigoninae palp follow Holm (1979) and Hormiga (1994, 2000). It is noteworthy that the membrane arising from the column and sometimes connected basally to the embolic division (radix) or suprategulum/suprategular apophysis is referred to here as a "median membrane", a term coined by Helsdingen (1965) for *Lepthyphantes leprosus* (Ohlert 1867). This term is preferred now as having priority over the same structure that Hormiga (1994, 2000) called an "embolic membrane", apparently also after Helsdingen (1969), who had renamed this membrane in *Linyphia* Latreille 1804.

Abbreviations used in the text and figures: E — embolus, ED — embolic division, EP — embolus proper, Fe — femur, L — lamella characteristica, LL — lateral lobes, MM — median membrane, Mt — metatarsus, P — paracymbium, PMP — posterior median plate, PPS — proximal part of scape, PS — pseudoscape, Pt — protegulum, R — radix, RA — radical apophysis, SA — suprategular apophysis, SMF — Senckenberg Museum, Frankfurt/M., Germany, TA — terminal apophysis, Te — tegulum, Th — thumb (lateral extension of embolus), Ti — tibia, Tm I — position of trichobothrium on tibia I, ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia.

Taxonomy

Family Linyphiidae Blackwall 1859

Subfamily Micronetinae Hull 1920

Agyneta martensi sp. n.

Figs 1–5

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 2500–2600 m, 25.–26.VI.1997, leg. J. Martens & P. Jäger.

Diagnosis. This species can easily be distinguished from the congeneric *Agyneta* Hull 1911 s.str. species by the unique shape of the lamella characteristica.

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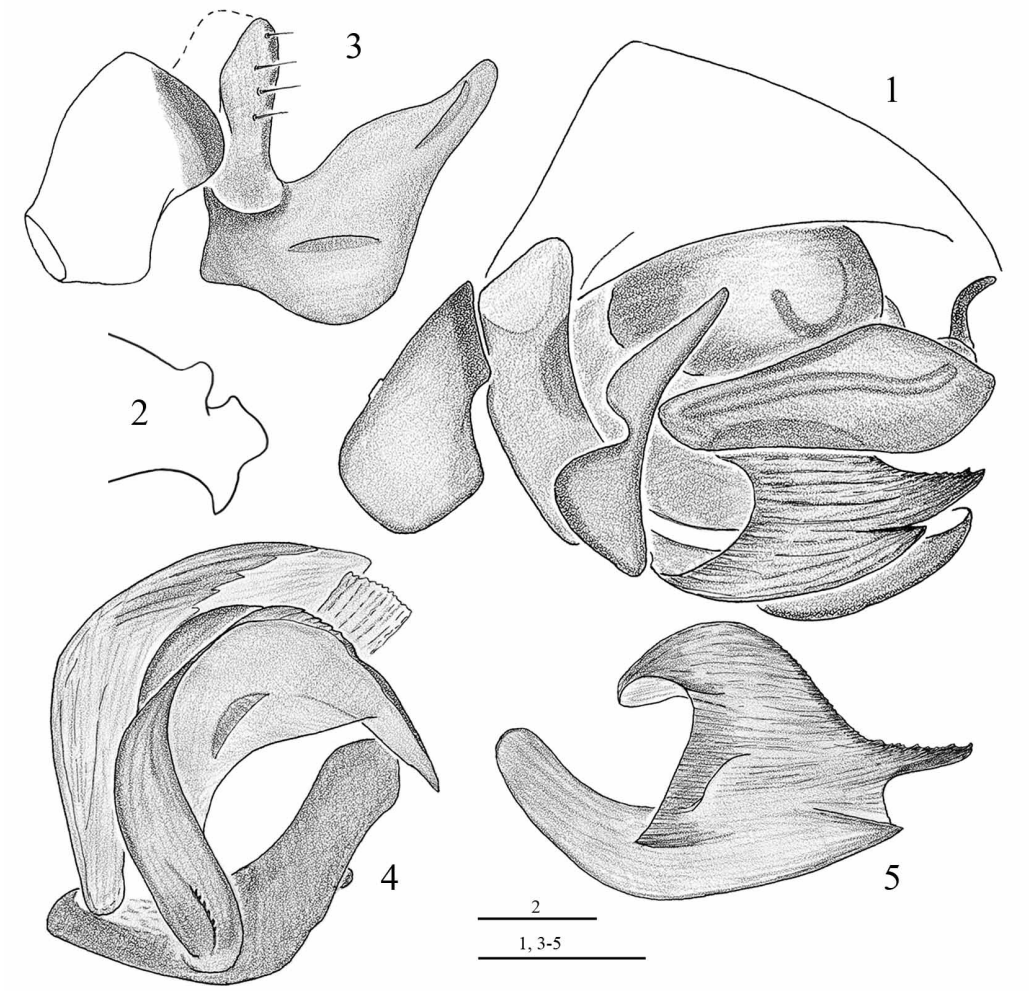
Etymology. The species honours Prof. Jochen Martens, the famous German zoologist who collected the type material of this species.

Description. Male. Total length—2.03. Chelicerae 0.28. Carapace 1.00 long, 0.78 wide, pale brown. Legs yellow. Leg I, 2.83 long (0.75+0.23+0.75+0.70+0.40), IV—3.41 long (1.05+0.2+0.90+0.88+0.38). Chaetotaxy. Ti I–IV 2-0-0-0; Mt I–IV spineless. All metatarsi with a trichobothrium, TmI—0.82. Palp (Figs 1–5): Cymbium conical in shape, with a small dorsal knob basally. Paracymbium with a deep posterior pocket. Lamella characteristica massive: large and wide, complicated in shape. Distal part of embolus elongated and pointed, basal part with a row of small teeth. Opisthosoma 1.10 long, 0.58 wide, grey.

Female. Unknown.



FIGURES 1–5. *Agyneta martensi* **sp. n.**, holotype. 1 right palp (retrolateral view), 2 basal part of cymbium (prolateral view), 3 palpal tibia and paracymbium (lateral view), 4 embolic division (ventral view), 5 lamella characteristica (lateral view).

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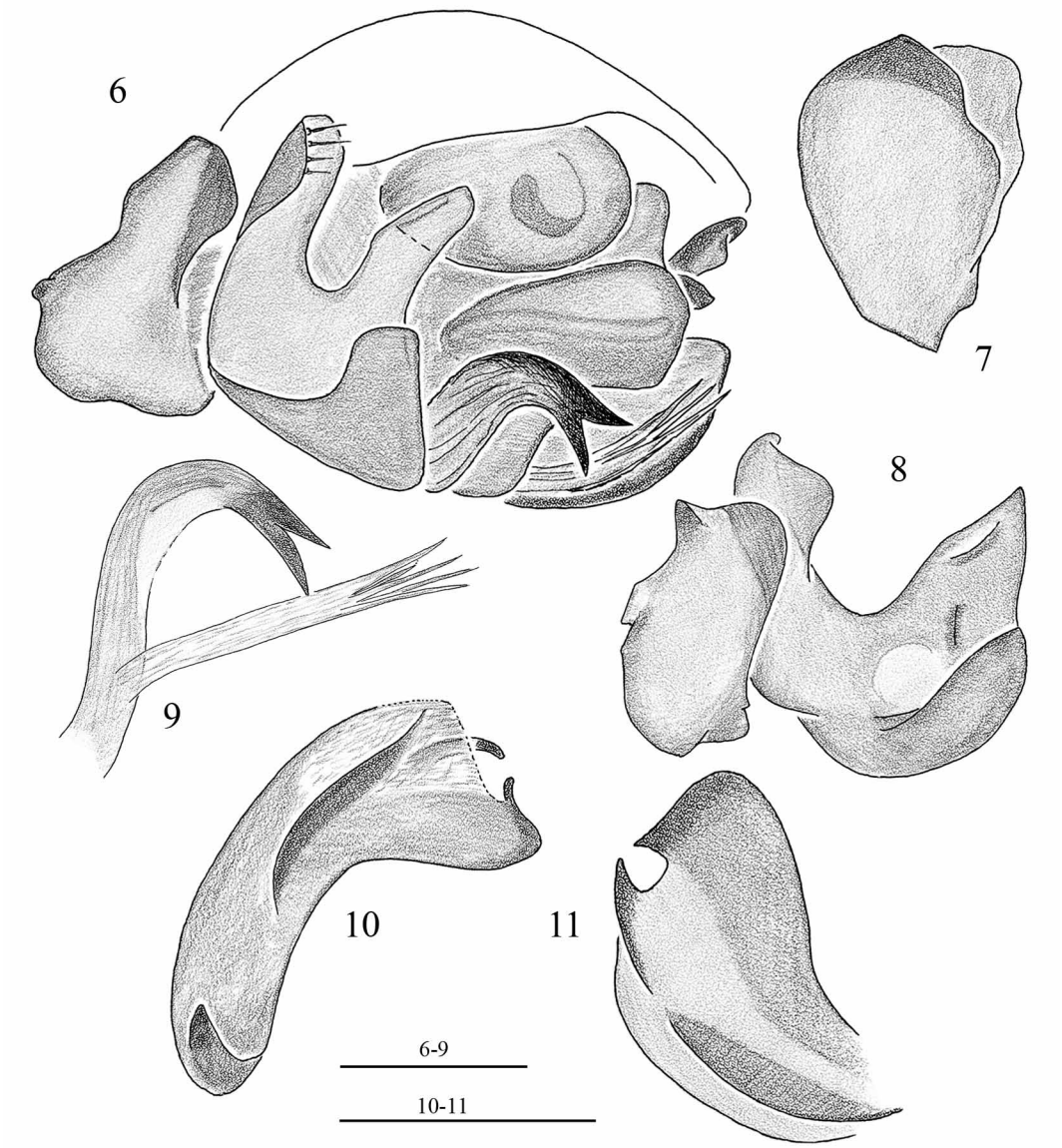
***Nippononeta sinica* sp. n.**
Figs 6–11

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2600 m, 9.VI.1997, leg. J. Martens & P. Jäger.



FIGURES 6–11. *Nippononeta sinica* **sp. n.**, holotype. 6 right palp (retrolateral view), 7 palpal tibia (dorsal view), 8 palpal tibia and paracymbium (lateral view), 9 lamella characteristica (lateral view), 10, 11 embolus (10 ventral, 11 dorsal view).

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Diagnosis. This species differs from numerous congeners by the faintly modified palpal tibia. It seems to be especially closely related to the Japanese *N. subnigra* Ono & Saito 2001, being easily distinguishable by the elongated palpal tibia, the well-sclerotised, hook-shaped and distally bifid lamella characteristica, as well as by the absence of a dentiform process on the embolus.

Etymology. The specific name is derived from the Latin "Sinae", meaning "China"; adjective.

Description. Male. Total length—1.75. Carapace 0.80 long, 0.65 wide, pale brown. Chelicerae 0.30 long. Legs yellow. Leg I, 2.41 long (0.68+0.20+0.58+0.55+0.40), IV—2.47 long (0.70+0.18+0.63+0.58+0.38). Chaetotaxy. Ti I–IV 2-0-0-0; Mt I–IV spineless. Mt IV lacking a trichobothrium, TmI—0.25. Palp (Figs 6–11): Tibia only slightly modified, with neither processes nor deep hollows. Anterior pocket of paracymbium well-developed. Lamella characteristica hook-shaped, bifid apically, with a long narrow membranous branch whisked distally. Embolus basally with an unciform process. Opisthosoma 0.98 long, 0.63 wide, dorsally pale with an indistinct grey median stripe and several transverse bands in posterior part.

Female. Unknown.

***Arcuphantes chinensis* sp. n.**
Figs 12–18

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 3.VI.1997, leg. J. Martens & P. Jäger. Paratypes: 1 ♂, 3 ♀, (SMF), together with holotype.

Diagnosis. The shape of the epigyne resembles that of the Chinese *A. curvatus* Sha & Zhu 1987 and *A. ramosus* Sha & Zhu 1987, both described from female material alone. The new species is easily distinguished by the non-extended lateral lobes, whereas in *A. curvatus* and *A. ramosus* the lateral lobes are protruding and easily visible on both sides of the scape.

Etymology. The specific name is derived from the name of the country of origin; adjective.

Description. Male. Total length—2.13. Carapace 1.00 long, 0.90 wide, pale brown. Chelicerae 0.48 long. Legs yellow, tibia with a grey median band, darker distally. Leg I, 5.93 long (1.53+0.25+1.75+1.40+1.00), IV—5.15 long (1.50+0.20+1.40+1.35+0.70). Chaetotaxy. Tibial spines mostly abraded, Mt I–IV: 1-0-0-0. Mt I–III with a trichobothrium, TmI—0.21. Palp (Figs 12–15): Tibia unmodified. Cymbium without proximal outgrowths. Paracymbium complex in shape, with three processes proximally and two dentiform outgrowths distally. Opisthosoma 1.18 long, 0.75 wide, pale dorsally, with a narrow, grey, median stripe, indistinct grey spots on both sides and randomly scattered white spotlets.

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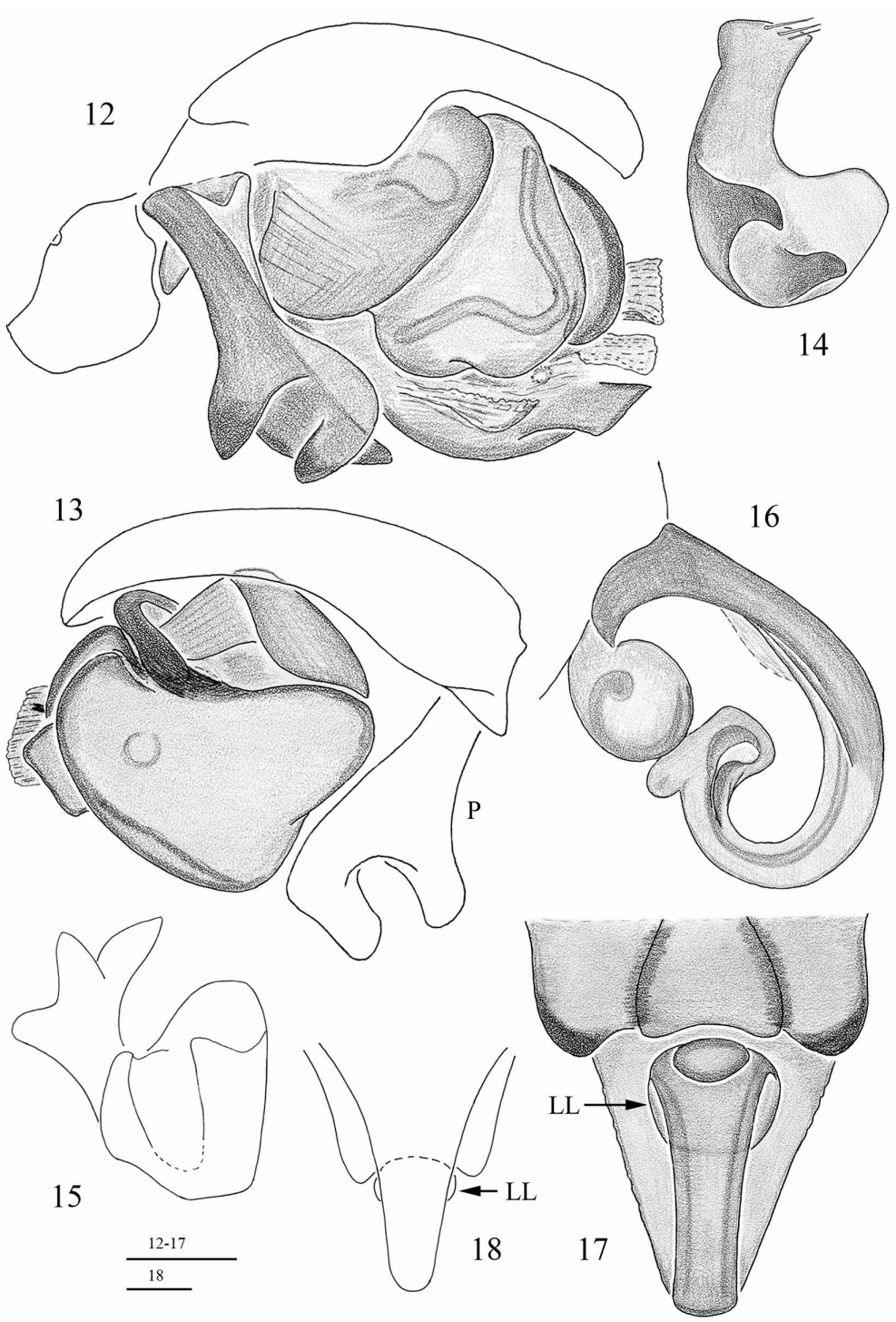

FIGURES 12–18. *Arcuphantes chinensis* **sp. n.**, paratypes. 12, 13 right palp (12 retrolateral view, 13 ventral view), 14, 15 paracymbium (14 lateral view, 15 frontal view), 16–18 epigyne (16 lateral view, 17 dorsal view, 18 ventral view). Abbreviations: LL lateral lobes, P paracymbium.

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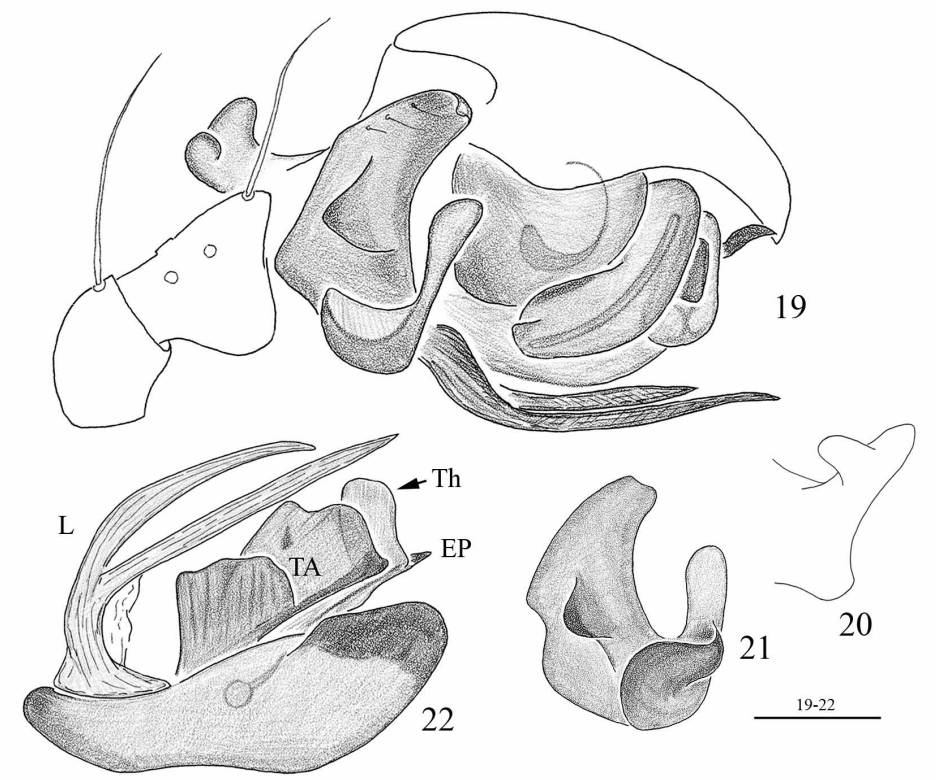
Female. Total length—2.70. Carapace 0.93 long, 0.75 wide. Chelicerae 0.58 long. Leg I, 6.23 long (1.68+0.32+1.70+1.55+0.98), IV—?. TmI—0.16. Opisthosoma 1.98 long, 1.30 wide. Epigyne (Figs 16–18): Scape long, gradually narrowed distad, coiled. Lateral lobes not extended. Body and leg colouration, chaetotaxy as in male.

***Indophantes ramosus* sp. n.**
Figs 19–22

Material. Holotype ♂ (SMF), China, Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI.1996, leg. J. Martens.

Diagnosis. The palp structure of *I. ramosus* **sp. n.** resembles that of the Himalayan *I. digitulus* (Thaler 1987). The new species is easily distinguishable from it by the bifid cymbial posterodorsal outgrowth, the absence of a tooth-like extension on the posterior part of the paracymbium, as well as by the more deeply divided branches of the lamella characteristica.



FIGURES 19–22. *Indophantes ramosus* **sp. n.**, holotype. 19 right palp (retrolateral view), 20 posterodorsal outgrowth of cymbium (prolateral view), 21 paracymbium (lateral view), 22 embolic division (ventral view). Abbreviations: EP embolus proper, L lamella characteristica, TA terminal apophysis, Th thumb.

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Etymology. The specific name is a Latin adjective meaning branching, referring to the shape of the cymbial posterodorsal outgrowth.

Description. Male. Total length—1.95. Carapace 0.90 long, 0.80 wide, brown. Chelicerae 0.40 long. Legs yellow without median bands. Leg I, 4.21 long (1.13+0.25+1.00+1.03+0.80), IV—3.80 long (1.03+0.23+0.93+0.98+0.63). Chaetotaxy. Ti I: 2-1-0-0, II: 2-0-1-0, III–IV: 2-0-0-0; Mt I–IV: 1-0-0-0. TmI—0.24. Palp (Figs 19–22): Cymbium with a pronounced, posterodorsal, bifid outgrowth. Paracymbium with a dentiform extension in posterior part. Lamella characteristica long, with two pointed branches. Terminal apophysis large, well-sclerotised, consisting of two flat lobes. Opisthosoma 1.00 long, 0.88 wide, dorsally pale with a wide grey median stripe in anterior part and several transverse grey stripes posteriorly.

Female. Unknown.

***Mughiphantes beishanensis* sp. n.**
Figs 23–24

Material. Holotype ♀ (SMF), China, Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI.1996, leg. J. Martens. Paratypes: 1 ♀, (SMF), same locality and dates, leg. J. Martens.

Diagnosis. The new species can easily be recognised by the specific shape of the epigyne with the rounded scape/pseudoscape, and the small posterior median plate.

Etymology. The species name refers to the locality whence the type material of this species derives; adjective.

Description. Female. Total length—2.63. Carapace 1.15 long, 0.93 wide, brown. Chelicerae 0.60 long. Legs pale brown without median bands. Leg I, 6.27 long (1.50+0.33+1.43+1.63+1.38), IV—5.09 long (1.40+0.33+1.25+1.28+0.83). Chaetotaxy unclear: spines mostly abraded (it is only possible to state that the tibiae are with ventral spine(s), and each metatarsus is with a dorsal spine). TmI—0.19. Opisthosoma 1.80 long, 1.25 wide, dorsally pale with a grey, wedge-like, axial stripe and flanked spots connected to the stripe with thin bands. Epigyne (Figs 23–24): Scape/pseudoscape rounded, posterior median plate small, poorly expressed.

***Mughiphantes jaegeri* sp. n.**
Figs 25–28

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, mixed coniferous/*Rhododendron* forest, 3050 m, 12.–13.VI.1997, leg. P. Jäger & J. Martens. Paratypes: 1 ♂, 4 ♀ (SMF), same locality, 14.–15.VI.1997, leg. P. Jäger & J. Martens.

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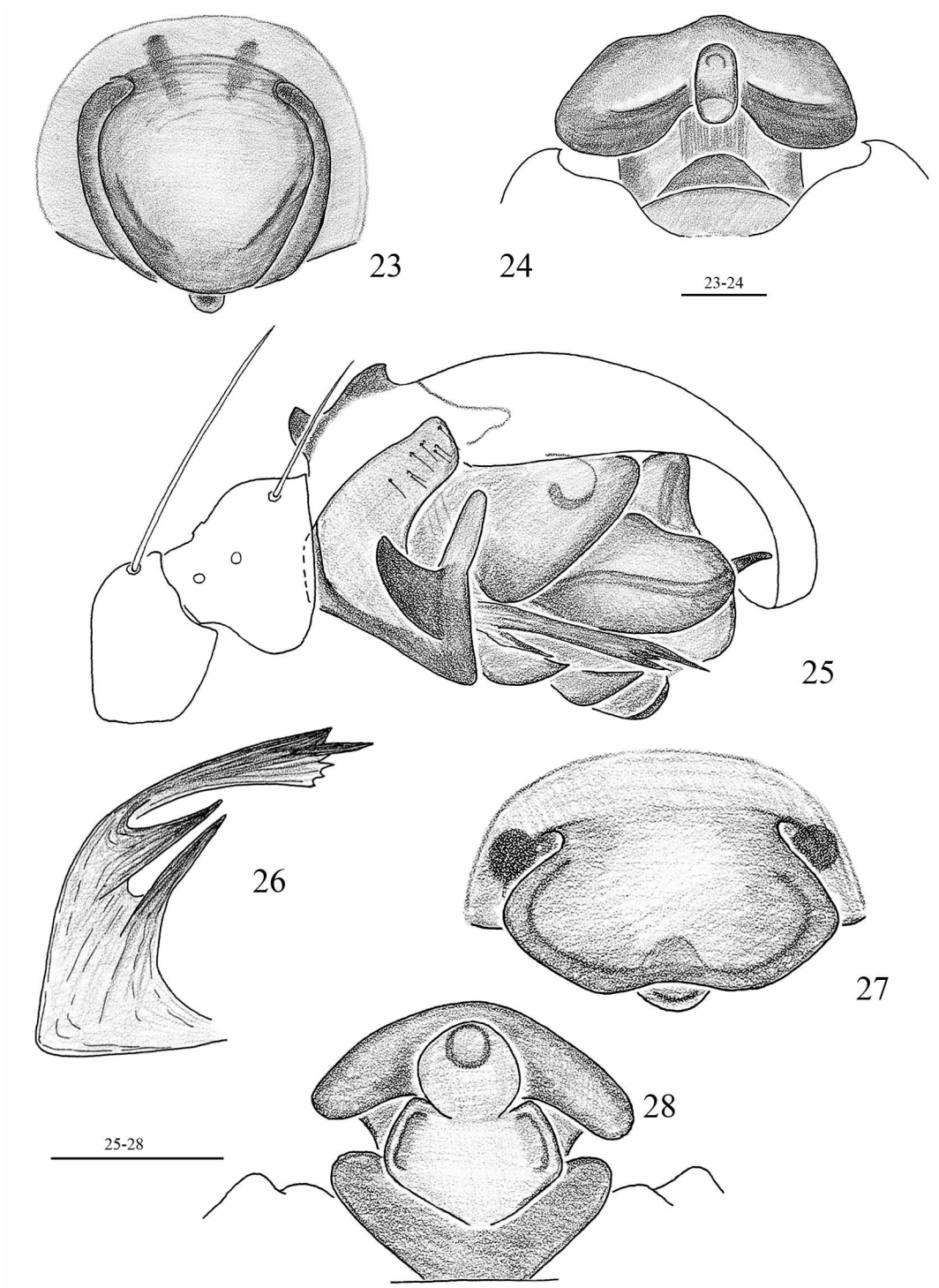

FIGURES 23–28. *Mughiphantes beishanensis* **sp. n.**, paratype (23, 24) & *Mughiphantes jaegeri* **sp. n.**, paratypes (25–28). 25 right palp (retrolateral view), 26 lamella characteristica (ventrolateral view), 23, 24, 27, 28 epigyne (23, 27 ventral view, 24, 28 dorsal view).

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Diagnosis. The new species differs from congeners by a combination of the following characters: distal part of paracymbium V-shaped, lamella characteristica three-branched, opisthosomal pattern absent.

Etymology. The species honours Dr Peter Jäger, the well-known German arachnologist who collected the type material of this species.

Description. Male. Total length—2.05. Carapace 1.05 long, 0.75 wide, blackish brown. Chelicerae 0.38 long. Legs pale reddish-brown without median bands. Leg I, 3.90 long (0.90+0.25+1.15+0.95+0.65), IV—3.09 long (0.83+0.23+0.73+0.75+0.55). Chaetotaxy. Ti I–II: 2-1-1-0; III–IV: 2-1(0)-1(0)-0. Mt I–IV: 1-0-0-0. TmI—0.23. Palp (Figs 25–26): Cymbium with a small posterodorsal elevation carrying two small hooks. Distal part of paracymbium V-shaped. Lamella characteristica with tree branches: two short and pointed, main branch widened distally, with teeth of different size apically. Opisthosoma 1.25 long, 0.85 wide, black, dorsal pattern absent.

Female. Total length—2.13. Carapace 1.00 long, 0.65 wide. Chelicerae 0.45 long. Leg I, 3.46 long (0.90+0.25+0.83+0.85+0.63), IV—3.02 long (0.88+0.23+0.68+0.75+0.48). TmI—0.23. Opisthosoma 1.75 long, 0.98 wide. Epigyne (Figs 27–28): Scape widened in middle part, forming acute lateral angles. Stretcher rounded. Posterior median plate narrow, V-shaped. Body and leg colouration, chaetotaxy as in male.

***Mughiphantes martensi* sp. n.**
Figs 29–34

Material. Holotype ♂ (SMF), China, Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8. VI. 1996, leg. J. Martens. Paratypes: 1 ♂, 1 ♀ (SMF), together with holotype.

Diagnosis. The new species differs from other congeners by a combination of the following characters: a pronounced, posterodorsal, slightly curved outgrowth on cymbium, lamella characteristica of peculiar shape, posterior median plate saddle-shaped.

The palp of *M. martensi* **sp. n.** resembles that of *Lepthyphantes huangyuanensis* Zhu & Li 1983, the latter species undoubtedly belonging to *Tchatkalophantes* Tanasevitch 2001, but the new taxon can easily be distinguished by the shorter and more strongly curved posterodorsal outgrowth of the palpal cymbium, as well as by the shape of the lamella characteristica. The main difference lies in the absence of a spear-shaped radical apophysis in the embolic division, this apomorphy being one of the main traits of the genus *Tchatkalophantes*.

Etymology. The species honours Prof. Jochen Martens, the famous German zoologist who collected the type material of this species.

Description. Male. Total length—2.40. Carapace 1.10 long, 0.88 wide, brown. Chelicerae 0.45 long. Legs pale brown without median bands. Leg I, 4.42 long (1.13+0.33+1.13+1.08+0.75), IV—4.59 long (1.18+0.28+1.20+1.18+0.75). Chaetotaxy

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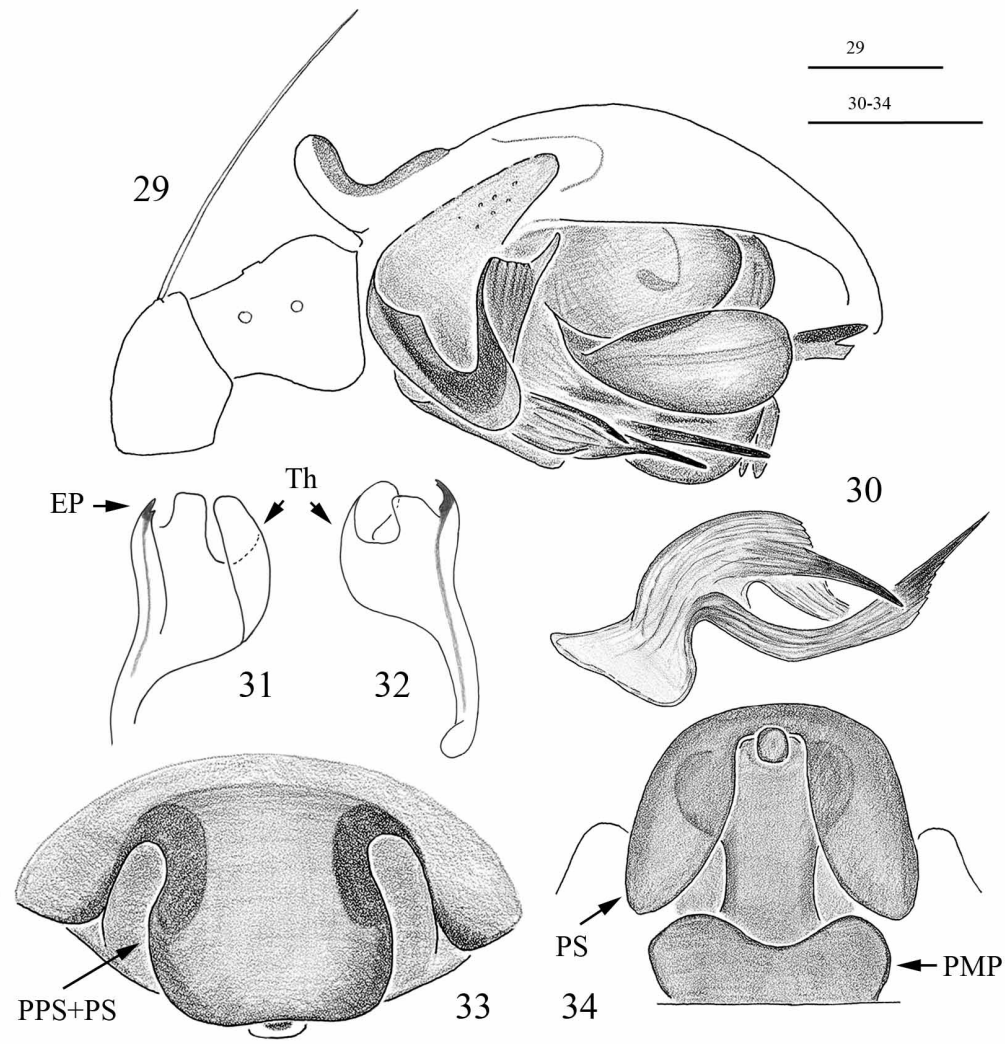
unclear: spines mostly abraded (it is only possible to state that the tibiae are with ventral spine(s), and each metatarsus has a dorsal spine). TmI—0.24. Palp (Figs 29–32): Cymbium with a pronounced slightly curved posterodorsal outgrowth. Lamella characteristica complex, with three branches. Embolus with a long, wide and curved lateral extension (= thumb). Opisthosoma 1.25 long, 0.83 wide, dark grey, dorsal pattern absent.



FIGURES 29–34. *Mughiphantes martensi* **sp. n.**, paratypes. 29 right palp (retrolateral view), 30 lamella characteristica (ventrolateral view), 31, 32 embolus (31 dorsal view, 32 ventral view), 33, 34 epigyne (33 ventral view, 34 dorsal view). Abbreviations: EP embolus proper, PMP posterior median plate, PPS proximal part of scape, PS pseudoscape, Th thumb.

Female. Total length—2.25. Carapace 0.98 long, 0.78 wide. Chelicerae 0.35 long. Leg I, 4.03 long (1.05+0.30+1.00+0.98+0.70), IV—4.01 long (1.13+0.30+0.98+0.95+0.65). TmI—0.22. Opisthosoma 1.40 long, 0.98 wide. Epigyne (Figs 33–34): Pseudoscape well-

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developed and covers lateral lobes. Stretcher short. Body and leg colouration, chaetotaxy as in male.

Subfamily Erigoninae Emerton 1882

***Asthenargus conicus* sp. n.**
Figs 35–38

Material. Holotype ♂ (SMF), China, Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI.1996, leg. J. Martens. Paratypes: 4 ♀ (SMF), together with holotype.

Diagnosis. The new species seems to be most closely related to the Middle Asian *A. edentulus* Tanasevitch 1989, but differs clearly by the expanded club-like tibial lateral process (narrow and pointed in *A. edentulus*), as well as by the strongly protruding, conical epigyne.

Etymology. The species name describes the shape of the epigyne; adjective.

Description. Male. Total length—1.83. Carapace 0.90 long, 0.75 wide, unmodified, pale reddish brown. Chelicerae 0.38 long. Legs pale yellowish red. Leg I, 2.57 long (0.73+0.23+0.65+0.53+0.43), IV—2.56 long (0.75+0.23+0.65+0.55+0.38). Chaetotaxy 2.2.2.1. Mt I–III each with a trichobothrium. TmI—0.32. Palp (Figs 35, 36): Tibia with a dark, lateral, distally knobbed process. Suprategular apophysis elongated, stout, rounded distally. Embolus black, highly sclerotised. Opisthosoma 1.00 long, 0.63 wide, grey.

Female. Total length—2.75. Carapace 1.20 long, 0.88 wide. Chelicerae 0.50 long. Leg I, 3.44 long (0.98+0.30+0.88+0.78+0.50), IV—3.56 long (1.03+0.33+0.90+0.80+0.50). TmI—0.38. Opisthosoma 1.58 long, 1.13 wide. Epigyne (Figs 37, 38) strongly protruding, conical. Body and leg colouration, chaetotaxy as in male.

***Dicymbium sinofacetum* sp. n.**
Figs 39–44

?*Araeoncus stigmosus* Xia *et al*. 2001: 164 (female only!).

Material. Holotype ♂ (SMF), China, Qinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI.1996, leg. J. Martens. Paratypes: 1 ♂, 5 ♀ (SMF), 2 ♀ (ZMMU), together with holotype; 2 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 2500–2600 m, 25.–26.VI.1997, leg. J. Martens & P. Jäger.

Diagnosis. The species is very closely related to the Siberian *D. facetum* (L. Koch 1879), but differs by the non-expanded proximal part of the paracymbium, by the presence

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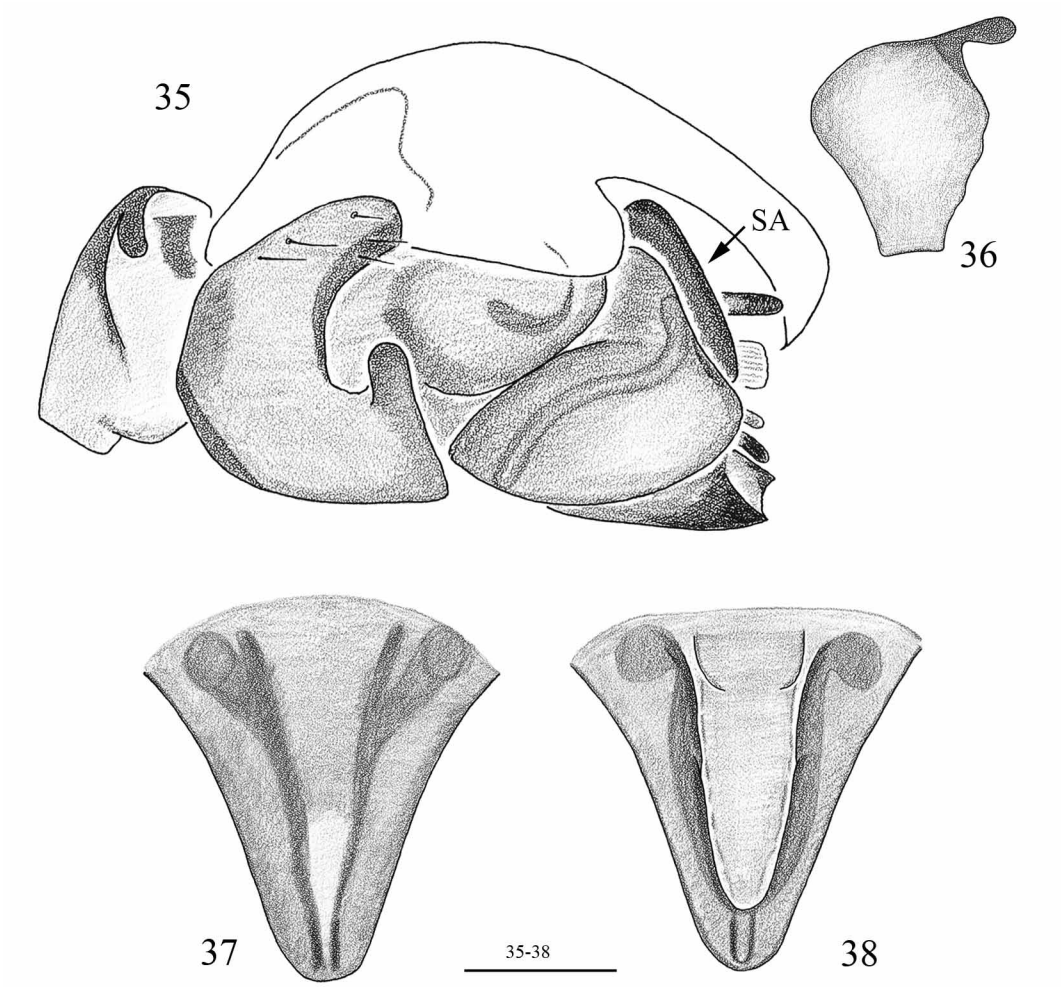
of a deep hollow at the base of the embolus, which is shorter than in *D. facetum*, as well as by the shape of the receptacula of the vulva. Like *D. facetum*, *D. sinofacetum* **sp. n.** has no trichobothrium on Mt IV.

Araeoncus stigmosus Xia, Zhang, Gao, Fei, Rui & Kim 2001 was described from Gansu Province, China from both sexes (Xia *et al.* 2001). According to the published figures, the female of this species belongs to the genus *Dicymbium* Menge 1868, not *Tibioploides* Eskov & Marusik 1991, and is probably referred to *D. sinofacetum* **sp. n.**

NB: The female of *D. facetum* has not yet been described.

Etymology. The species name *sinofacetum* is a combination of Latin "Sinae" and "facetum", emphasizing that the new Chinese species is closely related to *Dicymbium facetum* (L. Koch 1879); adjective.



FIGURES 35–38. *Asthenargus conicus* **sp. n.**, male holotype & female paratype. 35 right palp (retrolateral view), 36 palpal tibia (dorsal view), 37, 38 epigyne (37 ventral view, 38 dorsal view). Abbreviations: SA suprategular apophysis.

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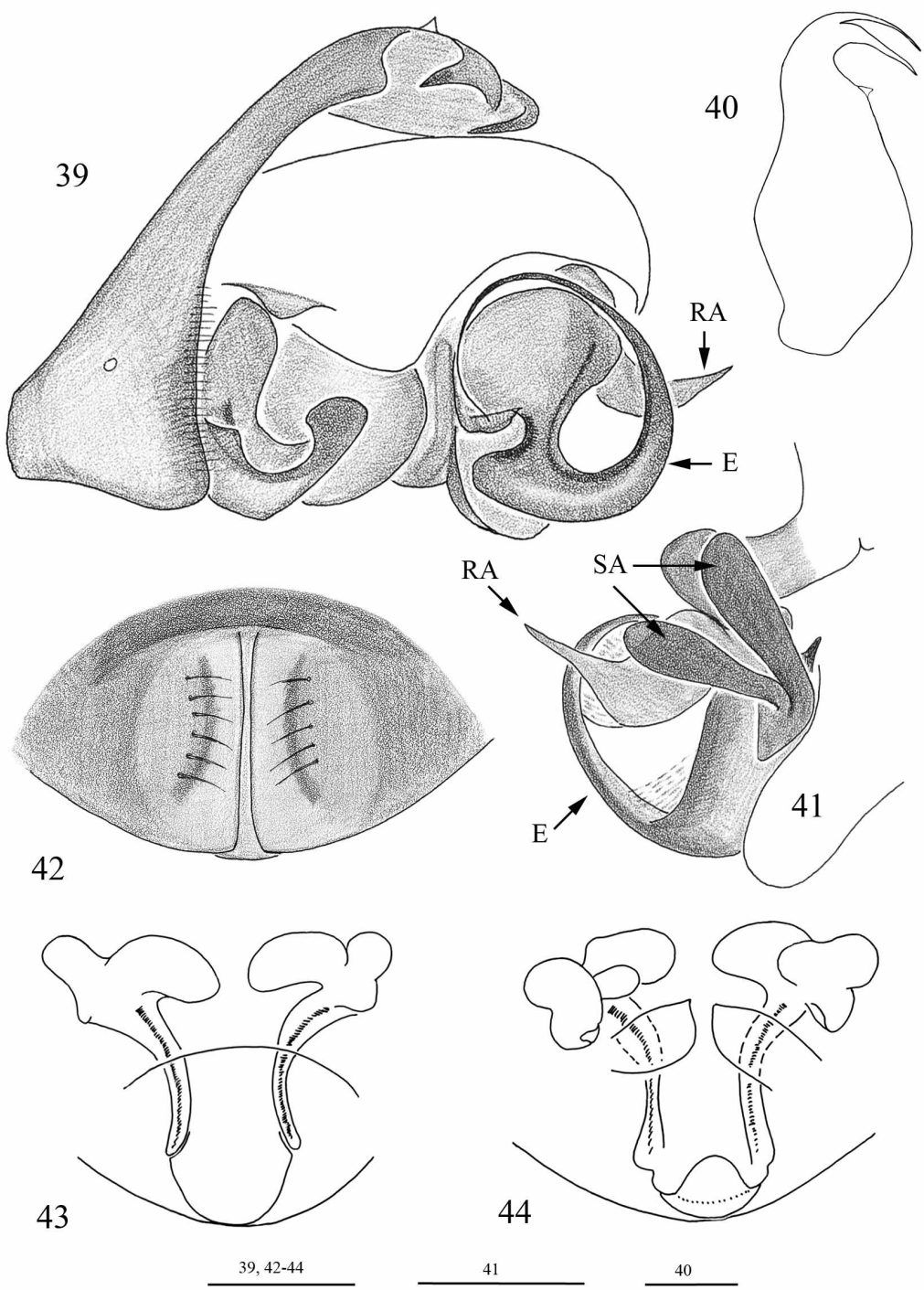

FIGURES 39–44. *Dicymbium sinofacetum* **sp. n.**, paratypes. 39 right palp (retrolateral view), 40 palpal tibia (dorsal view), 41 distal part of palp (prolateral view), 42 epigyne (ventral view), 43, 44 vulva (43 ventral view, 44 dorsal view). Abbreviations: E embolus, RA radical apophysis, SA suprategular apophysis.

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Description. Male. Total length—2.00. Carapace 0.83 long, 0.75 wide, unmodified, reddish brown. Chelicerae 0.30 long. Legs yellow-red. Leg I, 2.89 long (0.83+0.25+0.68+0.65+0.48), IV—3.09 long (0.88+0.25+0.83+0.70+0.43). Chaetotaxy 2.2.1.1, spines on tibiae I–III very small, on tibia IV almost equal to diameter of the segment. Mt IV lacking a trichobothrium. TmI—0.40. Palp (Figs 39–41). Palpal tibia before bifurcation with a small, almost transparent tooth. Suprategular apophysis long, divided into two club-like branches distally. Radix with a long, pointed, anterior outgrowth. Opisthosoma 1.15 long, 0.80 wide, grey to dark grey.

Female. Total length—2.33. Carapace 0.88 long, 0.70 wide. Chelicerae 0.35 long. Leg I, 2.84 long (0.75+0.25+0.78+0.63+0.43), IV—3.01 long (0.88+0.20+0.80+0.68+0.45). TmI—0.49. Opisthosoma 1.63 long, 1.05 wide. Epigyne as in Figs 42–44. Body and leg colouration, chaetotaxy as in male.

Houshenzinus gen. n.

Type species. *Houshenzinus rimosus* **sp. n.**

Etymology. The generic name is derived from the type locality. Gender masculine.

Diagnosis. Medium-sized erigonines, total length about 2 mm. Chaetotaxy unclear. The genus is characterised by a combination of the following characters: Male carapace highly modified. Metatarsi I–IV each with a trichobothrium. TmI ca 0.80. Palpal tibia with two processes. Paracymbium L-shaped. Embolus long and slender, radical part of embolic division with a hypertrophied, wide, curved, distally pointed outgrowth conducting and covering the embolus all along its extent.

Taxonomic remarks. The combination of the unique characters, as well as the absence of female material, makes the taxonomic position of this genus unclear.

Species included. Only the type species.

Houshenzinus rimosus sp. n.

Figs 45–50

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger. Paratype: 1 ♂ (SMF), together with holotype, 10.VI.1997, leg. J. Martens & P. Jäger.

Diagnosis. See above under the genus.

Etymology. The specific name is derived from the Latin adjective “rimosus”, meaning “cracked”, referring to the cloven head of the male carapace.

Description. Male. Total length—2.03. Carapace 0.78 long, 0.63 wide, greyish brown, Head elevation carrying posterior median eyes separated from frontal surface of carapace by a deep cleft, as in Figs 48–50. Chelicerae 0.30 long. Legs pale grey-yellow, base of

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tibiae and metatarsi darker. Leg I, 2.82 long (0.78+0.20+0.73+0.68+0.43), IV—2.89 long (0.78+0.23+0.73+0.75+0.40). Chaetotaxy unclear: tibial spines totally lost in holotype, paratype with one long dorsal spine on Ti IV. Metatarsi I–IV each with a trichobothrium. TmI—0.78. Palp (Figs 45–47): Tibia with two processes: one long and slender, the other short and wide. Paracymbium L-shaped, with a swollen outgrowth carrying several spines distally. Embolus very long and slender. Radical part of embolic division small, but with a hypertrophied, hood-like, wide, curved, distally pointed outgrowth conducting and covering all the embolus. Opisthosoma 1.20 long, 0.58 wide, grey.

Female. Unknown.

Shaanxinus gen. n.

Type species. *Shaanxinus rufus* **sp. n.**

Etymology. The generic name is derived from the Shaanxi Province, China. Gender masculine.

Diagnosis. Rather large, reddish-coloured erigonines, total length 2.21–3.15. The genus is characterised by a combination of the following characters: male carapace modified, with a high head elevation. Frontal surface of chelicerae without teeth, but with a serrate area. Chaetotaxy 2.2.2.2. Each metatarsus with a trichobothrium. TmI 0.80–0.85. Leg II much longer than leg I. Palpal tibia with a deep apical hollow. Paracymbium unique in shape, as in Figs 51–52. Suprategular apophysis short, flat, membranous distally and partly covering the embolic division. Radix large and flat, highly sclerotised, with a large rounded outgrowth, edge of latter folded, forming a groove hiding distal half of embolus. Base of embolus thick, rest of embolus thin and rather long.

Taxonomic remarks. The combination of the unique characters poses difficulties regarding placement of this genus. The taxonomic position of this genus is therefore unclear.

Species included. *Shaanxinus rufus* **sp. n.** and *Shaanxinus anguilliformis* (Xia, Zhang, Gao, Fei, Rui & Kim 2001) **comb. n.**

Shaanxinus rufus sp. n.

Figs 51–56

Material. Holotype: ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 23.VI.1997, leg. J. Martens & P. Jäger. Paratypes: 2 ♂ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger; ♂ (ZMMU), same locality, 20.VI.1997, leg. J. Martens & P. Jäger.

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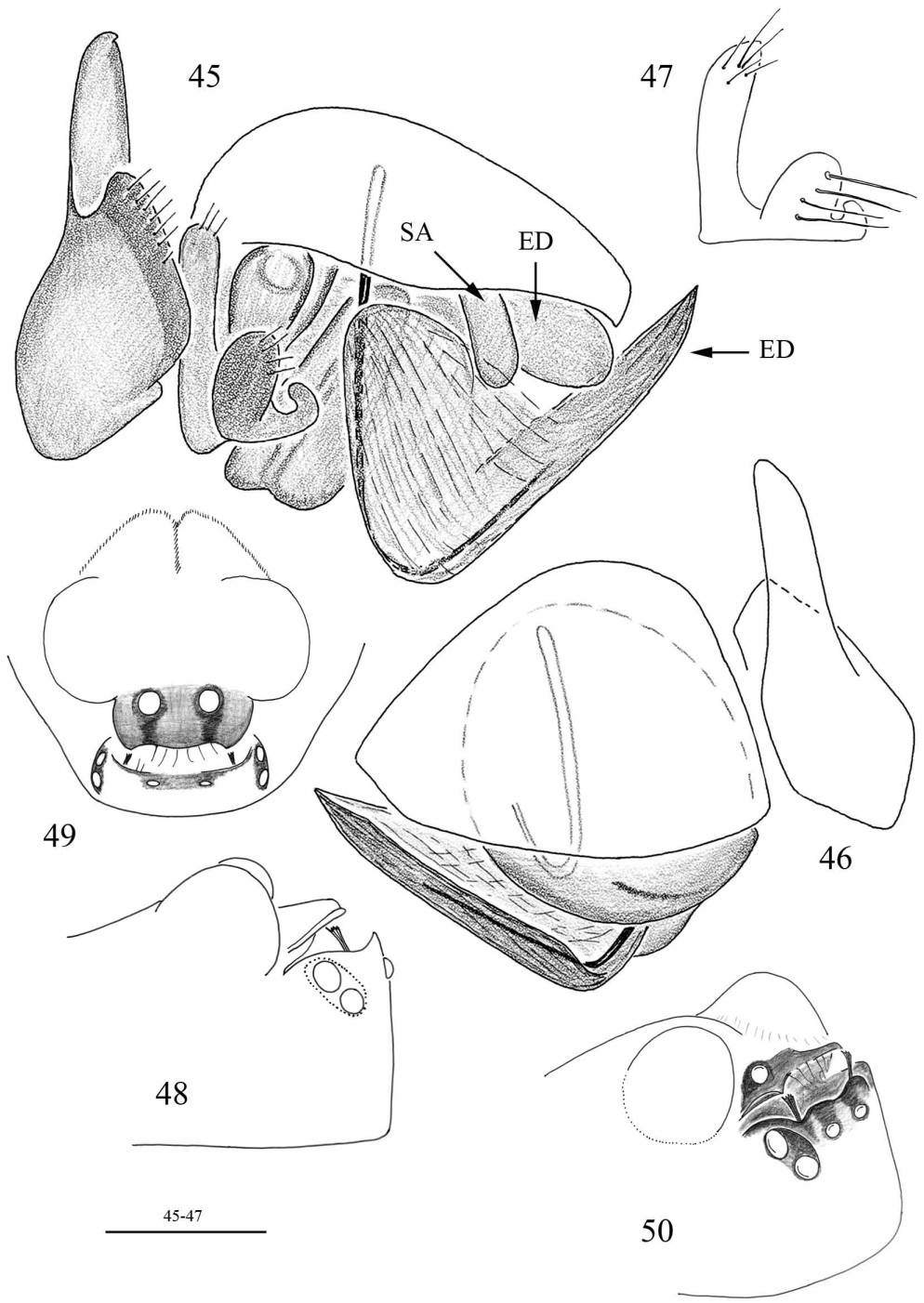

FIGURES 45–50. *Houshenzinus rimosus* **gen. n. sp. n.**, paratype. 48–50 male carapace (lateral, dorsal and frontolateral views, respectively, not to scale), 45, 46 left palp (45 retrolateral view, 46 prolateral view), 47 paracymbium (lateral view). Abbreviations: ED embolic division, SA suprategular apophysis.

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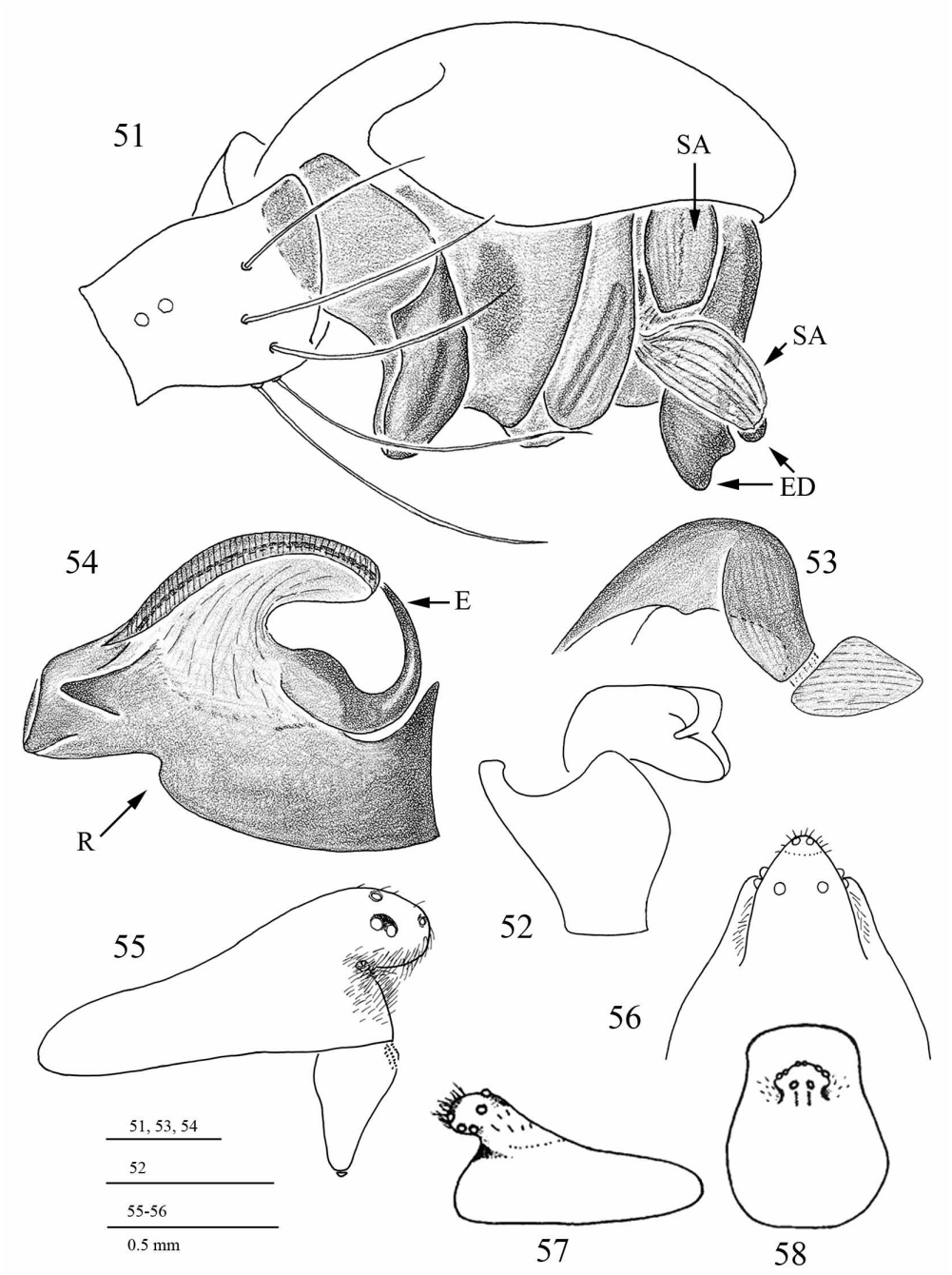

FIGURES 51–58. *Shaanxinus rufus* **gen. n. sp. n.**, paratype (51–56), & *Shaanxinus anguilliformis* (Xia, Zhang, Gao, Fei, Rui & Kim, 2001) **comb. n.** (57, 58, after authors, not to scale). 55–58 male carapace (55 & 57 lateral view, 56 & 58 dorsal view), 51 right palp (retrolateral view), 52 palpal tibia and paracymbium (dorsal view), 53 suprategular apophysis (lateral view), 54 embolic division (ventral view). Abbreviations: E embolus, ED embolic division, R radix, SA suprategular apophysis.

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Diagnosis. The new species is closely related to *Shaanxinus anguilliformis* **comb. n.** described from Hebei Province by Xia *et al*. (2001) as *Walckenaeria anguilliformis* Xia, Zhang, Gao, Fei, Rui & Kim 2001. The differences between these species are as follows: the new species is rather larger (length of *S. anguilliformis* ca 2.21–2.27, of *S. rufus* **sp. n.** ca 3.00–3.20); the shape of the palpal tibia (dorsal view) and of the head elevation: in the new species the head elevation is narrowed distally, being rounded in *S. anguilliformis*, and the clypeus in *S. anguilliformis* is much wider than in *S. rufus* n. sp. (cf. Figs 55, 56 & 57, 58).

Etymology: The specific name is derived from the Latin "rufus", meaning red, referring to the reddish carapace; adjective.

Description. Male. Total length—3.10. Carapace 1.55 long, 1.20 wide, brownish red. Head elevation large and high, directed anteriorly, narrowing distad, as in Figs 55–56. All eyes situated on this elevation. Chelicerae 0,45 long, frontal surface near base slightly convex and serrated. Legs reddish yellow. Leg I, 4.55 long (1.30+0.40+1.25+1.05+0.55), IV—4.25 long (1.15+0.30+1.10+1.20+0.50). Leg II, 5.35 long (1.60+0.40+1.65+1.15+0.55), much longer than leg I. Ti and Mt I–II slightly curved. Chaetotaxy 2.2.2.2. Mt I–IV each with a trichobothrium. TmI—0.82. Palp (Figs 51–54): Palpal tibia with a shallow and rounded hollow. Suprategular apophysis relatively short, flat, membranous apically and partly covering the embolic division. Radix with a large rounded outgrowth, its edge folded and forming a groove hiding distal half of embolus. Opisthosoma 1.70 long, 1.10 wide, pale grey, almost white, with two dorsal, median, wide, parallel, grey, interrupted stripes.

Female. Unknown.

Shanus gen. n.

Type species. *Shanus taibaiensis* **sp. n.**

Etymology. The generic name is derived from the name of the area where the new species was found. Gender masculine.

Diagnosis. Rather small, dark-coloured Erigoninae, total length ca 1.75. The genus is characterised by a combination of the following characters: male carapace unmodified, without cephalic pits. Chaetotaxy 2.2.2.2. Each metatarsus with a trichobothrium. TmI ca 0.90. Palp highly complicated. Paracymbium with a long narrow process ventrally, directed distad. Tegulum elongated into a long, well-sclerotised, spindle-shaped process. Suprategular apophysis large, like a strongly curved hook, pointed apically. Embolic division with a small radical part, but with a very large and flat process conducting and covering the distal part of embolus. Embolus slender and long, coiled.

Taxonomic remarks. The combination of the unique characters, coupled with the absence of female material, make the systematic position of this genus unclear.

Species included. Only the type species.

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***Shanus taibaiensis* sp. n.**
Figs 59–63

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 2500–2600 m, 25.–26.VI.1997, leg. J. Martens & P. Jäger.

Diagnosis. See above under the genus.

Etymology. The species name is derived from the name of the area where the new species was found; adjective.

Description. Male. Total length—1.75. Carapace 0.83 long, 0.65 wide, blackish brown, unmodified, lacking cephalic pits. Chelicerae 0.28 long. Legs brown. Leg I, 2.13 long (0.60+0.20+0.53+0.45+0.35), IV—2.43 long (0.65+0.20+0.63+0.60+0.35). Chaetotaxy 2.2.2.2. Tibial spines shorter than diameter of the segment. Each metatarsus with a trichobothrium. TmI—0.90. Palp (Figs 59–63): Paracymbium with a long narrow process ventrally, directed anteriad. Tegulum elongated into a long, well-sclerotised, spindle-shaped process. Suprategular apophysis large, like a strongly curved hook, pointed apically. Embolic division with a small radical part, but with a very large and flat process conducting and covering the distal part of embolus. Embolus slender and long, coiled. Opisthosoma 0.95 long, 0.58 wide, dark grey.

Female. Unknown.

***Taibainus* gen. n.**

Type species. *Taibainus shanensis* **sp. n.**

Etymology. The generic name is derived from the name of the area where the new species was found. Gender masculine.

Diagnosis. Small-sized, dark-coloured Erigoninae. Total length ca 1.46. Chaetotaxy unclear (spines lost or reduced). Metatarsus IV without trichobothrium. TmI ca 0.60. The genus is characterised by a combination of the following characters: male carapace unmodified, cephalic pits present. Palpal structure very simple. Palpal tibia unmodified. Paracymbium moderately small, simple in shape. Suprategular apophysis short but wide, median membrane well-developed. Embolic division Z-shaped. Embolus relatively short, straight.

Taxonomic remarks. The taxonomic position of this new genus is unclear, especially as the female is unknown. The embolic division of *Taibainus shanensis* **sp. n.** is similar to that of *Erigonoplus* Simon 1884, in particular *E. globipes* (L. Koch 1872), but I am not inclined to combine these genera, because *Erigonoplus* shows certain important differences, e.g. modified male carapace and palpal tibia, armed femora I, etc.

Species included. Only the type species.

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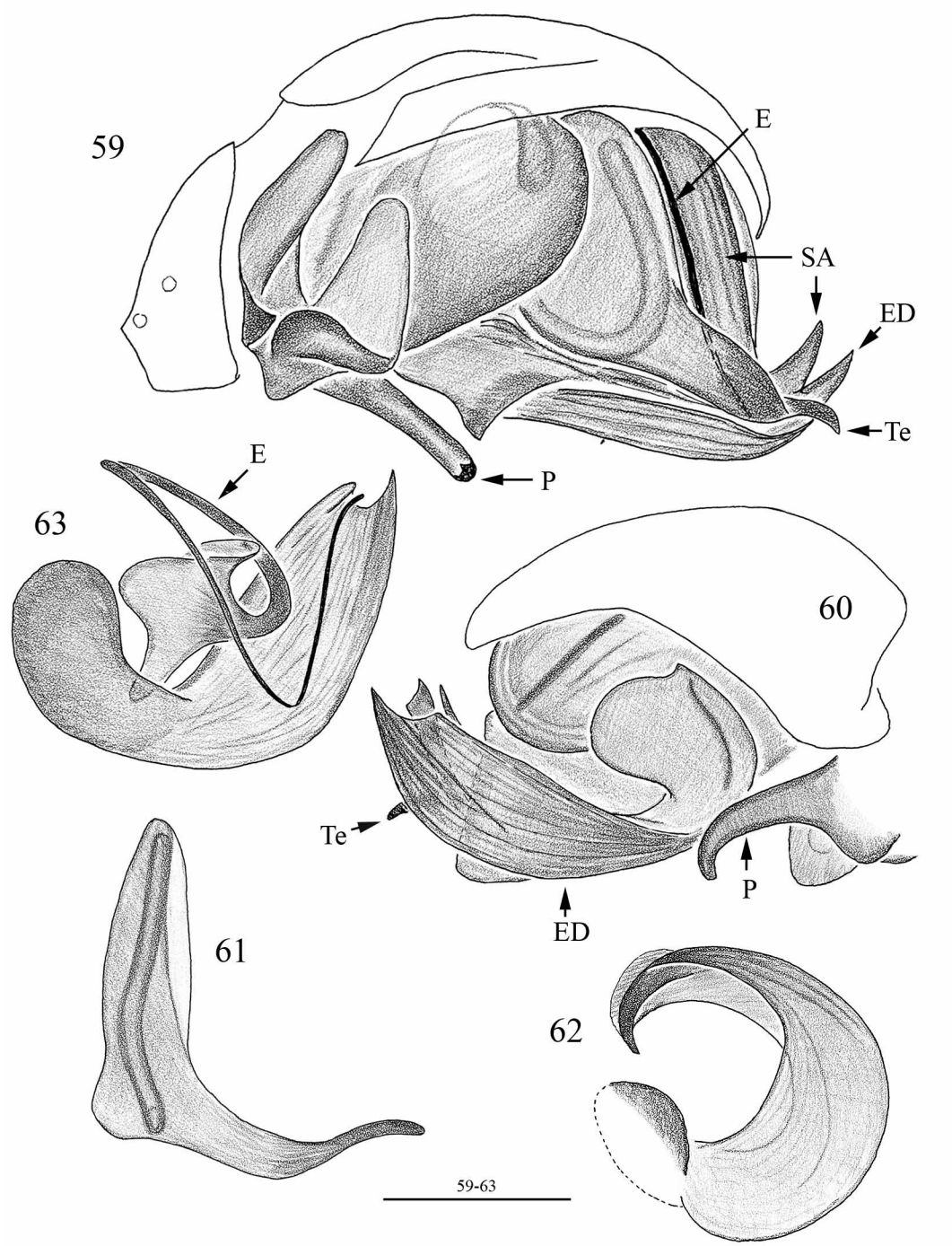

FIGURES 59–63. *Shanus taibaiensis* **gen. n. sp. n.**, holotype. 59, 60 right palp (59 retrolateral view, 60 prolateral view), 61 tegulum (lateral view), 62 suprategular apophysis (lateral view), 71 embolic division (ventral view). Abbreviations: E embolus, ED embolic division, P paracymbium, SA suprategular apophysis, Te tegulum.

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***Taibainus shanensis* sp. n.**
Figs 64–67

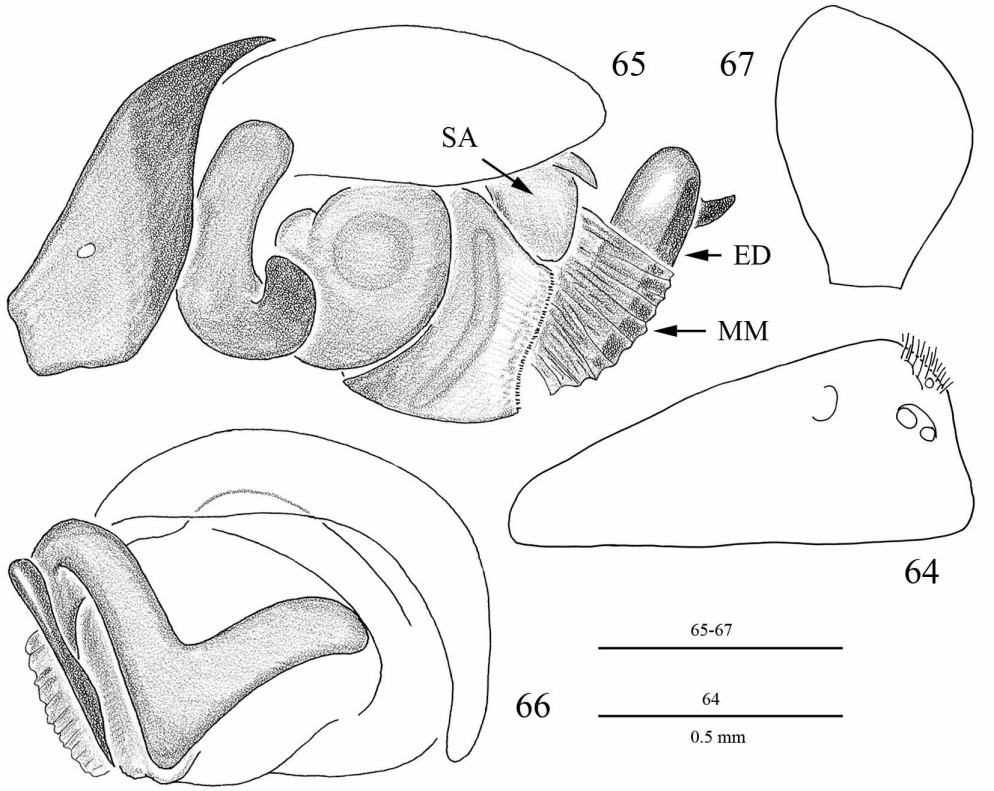
Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, mixed coniferous/*Rhododendron* forest, 3050 m, 14.–15.VI.1997, leg. P. Jäger & J. Martens.

Taxonomic remarks. See above under the genus.

Etymology. The specific name is derived from the name of the area where the new species was found; adjective.

Description. Male. The holotype is mostly damaged. Total length—1.46. Carapace 0.68 long, 0.50 wide, black brown, cephalic part slightly elevated, cephalic pits present (Fig. 64). Legs pale brown. Chaetotaxy unclear. Metatarsus IV without trichobothrium. TmI—0.59. Palp (Figs 65–67): Palpal tibia unmodified. Paracymbium relatively small, simple. Suprategular apophysis short but wide, with a tooth in middle part. Median membrane well-developed, covering part of embolic division. Embolic division Z-shaped. Embolus relatively short, straight. Opisthosoma 0.85 long, 0.53 wide, dark grey.

Female unknown.



FIGURES 64–67. *Taibainus shanensis* **gen. n. sp. n.**, holotype. 64 male carapace (lateral view), 65, 66 right palp (65 retrolateral view, 66 prolateral view), 67 palpal tibia (dorsal view). Abbreviations used: ED embolic division, MM median membrane, SA suprategular apophysis.

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***Taibaishanus* gen. n.**

Type species. *Taibaishanus elegans* **sp. n.**

Etymology. The generic name is a combination of two words designating the area where the new species was found. Gender masculine.

Diagnosis. Rather large Erigonine, total length 2.50–3.00. Male carapace slightly modified, carrying a peculiar arrangement of bristles. Chaetotaxy 2.2.1.1. All metatarsi with a trichobothrium. TmI—0.65–0.67. The genus is characterised by the following combination of characters: a special shape of palpal tibia, a hypertrophied radical extension of embolic division and a long embolus with a sigmoid apical part.

Taxonomic remarks. The taxonomic position of this genus is completely unclear, especially so in view of the highly peculiar genitalic characters.

Species included. Only the type species.

***Taibaishanus elegans* sp. n.**
Figs 68–75

Material. Holotype ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2600 m, 9.VI.1997, leg. J. Martens & P. Jäger. Paratypes: 2 ♂, 2 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 8.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), same, above Houshenzi, secondary broadleaved forest, 1650 m, 1/–3.VII.1997, leg. J. Martens & P. Jäger; 1 ♂, 2 ♀ (ZMMU) , same, above Houshenzi, mixed coniferous/ *Rhododendron* forest, 3050 m, 12.–13.VI.1997, leg. P. Jäger & J. Martens.

Diagnosis. See above under the genus.

Etymology. The specific name is a Latin adjective meaning “elegant”, this referring to the shape of the embolic division.

Description. Male. Total length—2.50. Carapace 1.20 long, 0.90 wide, pale reddish brown, slightly modified: behind a small head elevation there is a shallow hollow hidden below small appressed bristles as in Fig. 68. Chelicerae 0.43 long, without frontal tooth. Legs pale reddish yellow. Leg I, 4.34 long (1.18+0.28+1.13+1.10+0.65), IV—4.31 long (1.15+0.28+1.15+1.13+0.60). Chaetotaxy 2.2.1.1. Each metatarsus with a trichobothrium. TmI—0.67. Palp (Figs 69–73): Tibia with a long, retrolateral, S-shaped process. Hollow between pro- and retrolateral processes of tibia with long straight spines. Paracymbium U-shaped, unciform apically, proximal part with a rounded outgrowth. Protegulum conical, membranous. Embolic division hypertrophied, complex. Embolus very long, wide, regularly narrowed distad, S-shaped apically. Radix of embolic division flat and wide, with a very long and curved apophysis almost equal in length to embolus. Opisthosoma 1.33 long, 0.83 wide, pale dorsally, with two median, grey, interrupted stripes.

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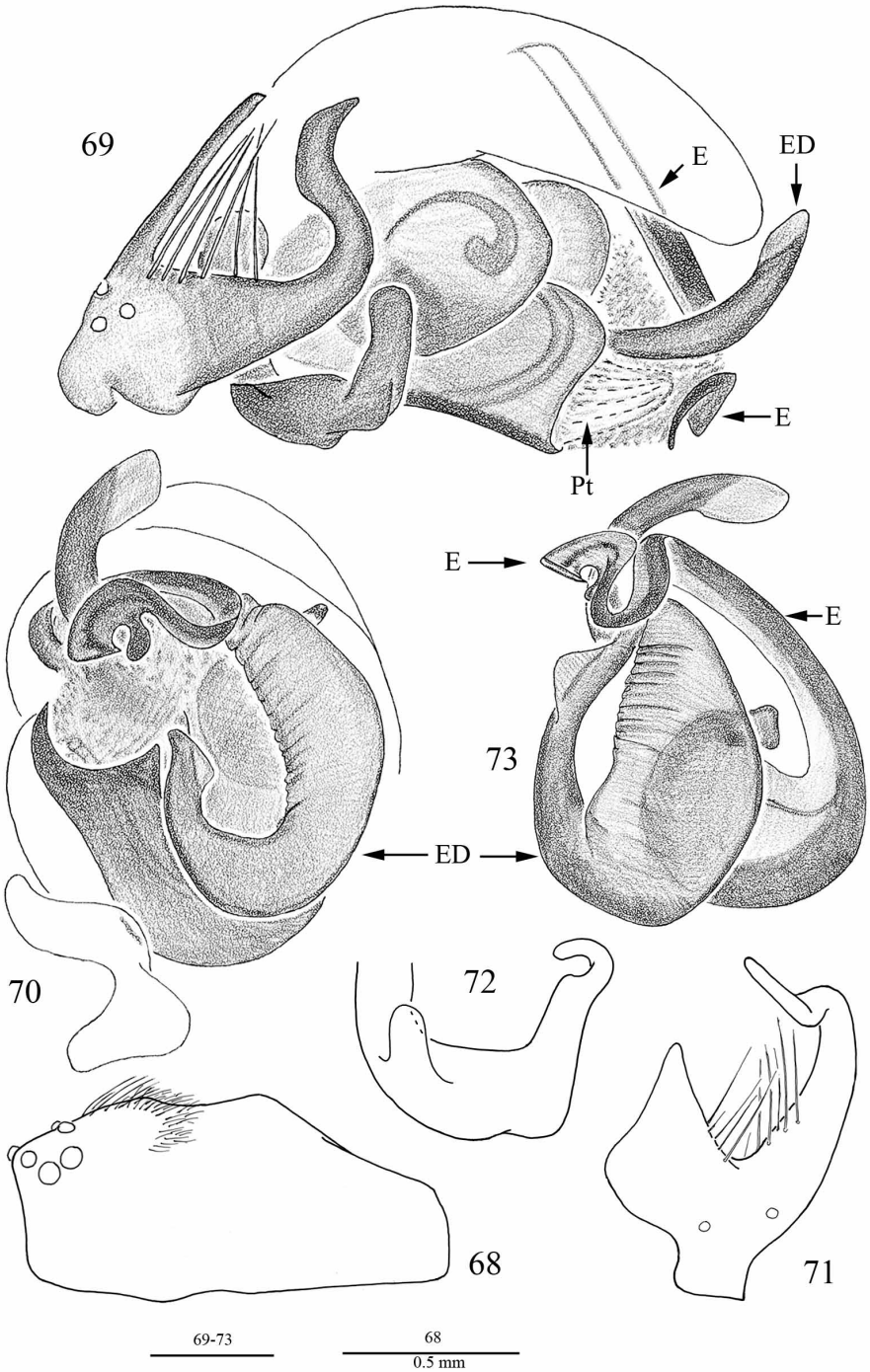

FIGURES 68–73. *Taibaishanus elegans* **gen. n. sp. n.**, paratype. 68 male carapace (lateral view), 69, 70 right palp (69 retrolateral view, 70 ventral view), 71 palpal tibia (dorsal view), 72 paracymbium (lateral view), 73 embolic division (ventral view). Abbreviations: E embolus, ED embolic division, Pt protegulum.

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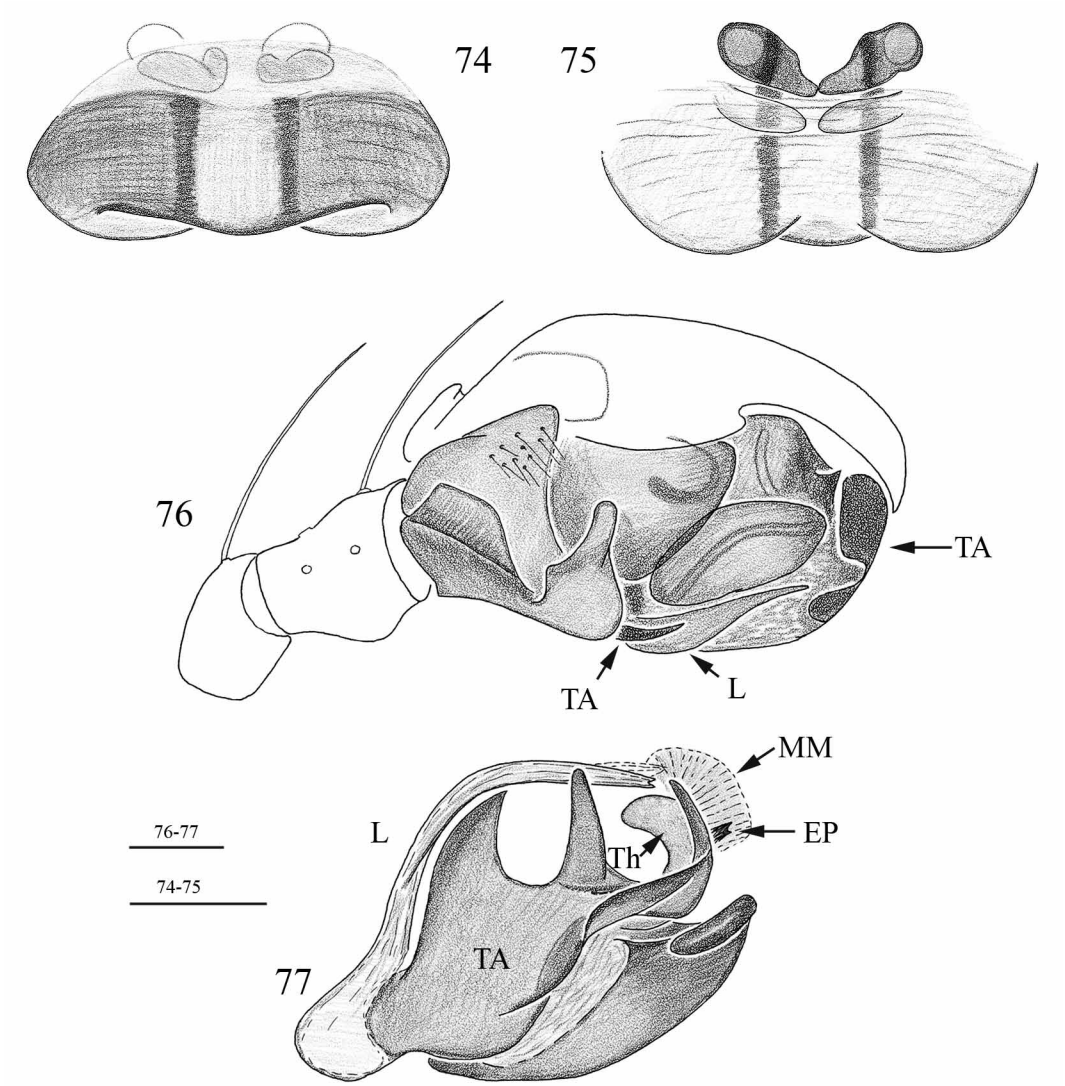

FIGURES 74–77. *Taibaishanus elegans* **gen. n. sp. n.** (74, 75), paratype & *Denisiphantes denisi* (Schenkel 1963) specimen from Bei Shan N. P. (76, 77). 74, 75 epigyne (74 ventral view, 75 dorsal view), 76 right palp (retrolateral view), 77 embolic division (ventral view). Abbreviations: EP embolus proper, L lamella characteristica, MM median membrane, TA terminal apophysis, Th thumb.

Female. Total length—2.25 (max 3.00). Carapace 1.00 long, 0.90 wide. Chelicerae 0.38 long. Leg I, 3.64 long (1.03+0.25+0.95+0.83+0.58), IV—3.86 long (1.05+0.20+1.08+0.98+0.55). TmI—0.65. Opisthosoma 1.25 long, 1.00 wide. Epigyne as in Figs 74–75. Body and leg colouration, chaetotaxy as in male.

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Other identified Linyphiidae
(in alphabetical order)

***Aprifrontalia afflata* Ma & Zhu 1991**

Material: 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger.

***Denisiphantes denisi* (Schenkel 1963)**
Figs 76–77

Material: 3 ♂ (SMF), China, Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI. 1996, leg. J. Martens. Paratypes: 1 ♂ (SMF), Quinghai Prov., Koko Nor Lake, southern shore, near Heimane, 3200–3250 m, 9–21.VI.1996, leg. J. Martens.

***Gnathonarium taczanowskii* (O. Pickard-Cambridge 1873)**

Gnathonarium cambridgei Schenkel 1963: 114 **syn. n.**

Material: 2 ♂, 10 ♀ (SMF), China, Quinghai Prov., Koko Nor Lake, southern shore, near Heimane, 3200–3250 m, 9.–21.VI.1996, leg. J. Martens; 1 ♀ (SMF), Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2600 m, 9.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger.

Taxonomic remarks. The recently published revision of the genus *Gnathonarium* Karsch 1881 by Tu & Li (2004), provided with splendid and highly detailed illustrations, clearly shows that *G. cambridgei* Schenkel 1963, known from China, represents a junior synonym of *Gnathonarium taczanowskii* (O. Pickard-Cambridge 1873) **syn. n.** The latter species was originally described from the Lake Baikal region (Pickard-Cambridge 1873), and currently known to be widespread in Asia from the Urals in the West to Cisokhotia, Kamchatka, Sakhalin etc. in the East; also recorded in Mongolia and throughout South Siberia. In the Nearctic, recorded only from Alaska (Tanasevitch 2006).

***Gongylidioides rimatus* (Ma & Zhu 1990)**
Figs 78–83

Material. 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi,

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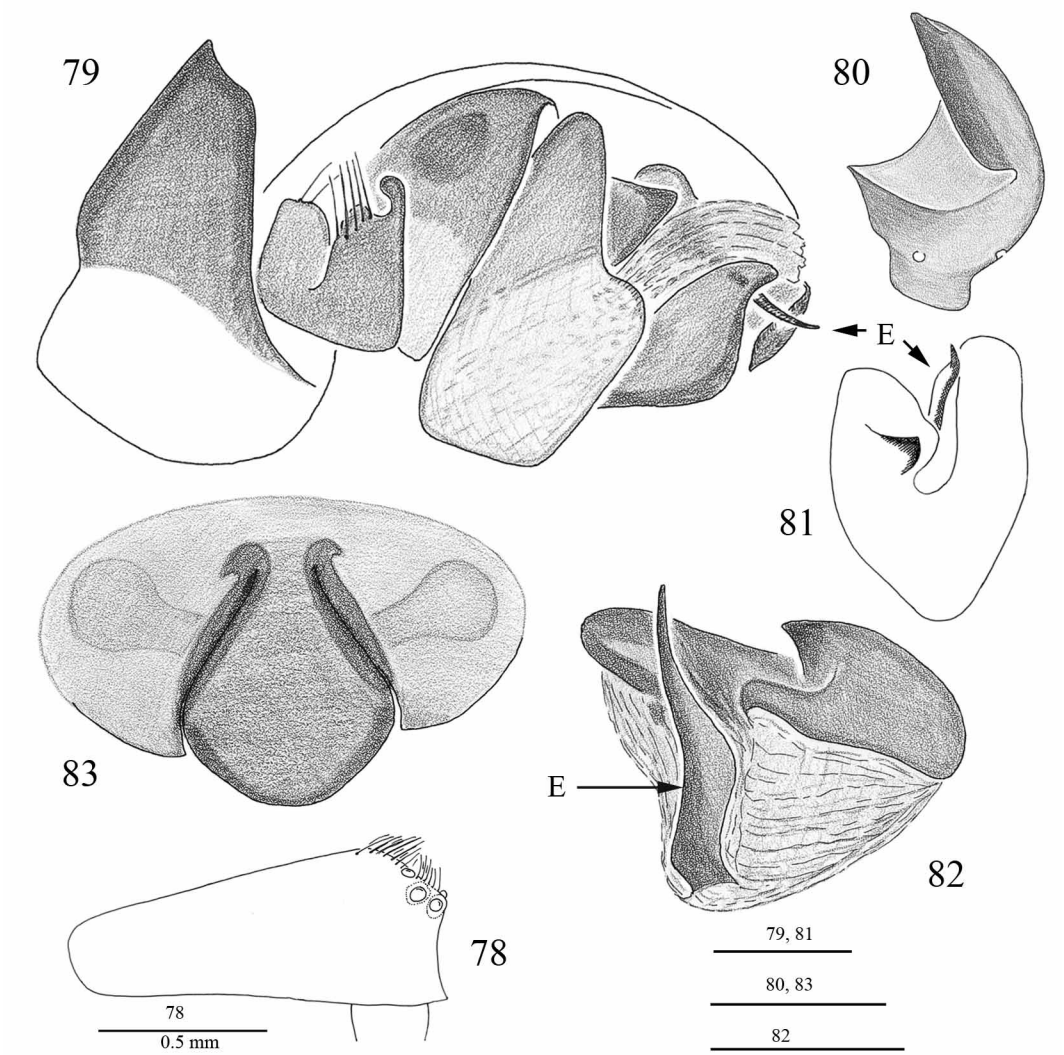
primary broadleaved forest, 1700–2600 m, 9.VI.1997, leg. J. Martens & P. Jäger. Paratypes: 1 ♂, 2 ♀ (SMF), same, above Houshenzi, primary broadleaved forest, 1700–2600 m, 10.VI.1997, leg. J. Martens & P. Jäger.

Taxonomic remarks. This species was originally described from Hubei Province, China as *Oedothorax rimatus* by Ma & Zhu (1990). It seems to be especially closely related to the Chinese and Japanese *Gongylidioides onoi* Tazoe 1994 (= *Aprifrontalia quadrialata* Gao, Xing & Zhu 1996), but is easily distinguished by the less strongly developed head elevation on the male carapace, the absence of a deep distal hollow on the paracymbium, as well as by the less strongly narrowed epigynal plate.



FIGURES 78–83. *Gongylidioides rimatus* (Ma & Zhu 1990). 78 male carapace (lateral view), 79 right palp (retrolateral view), 80 palpal tibia (dorsal view), 81, 82 embolic division (81 ventral view, 82 dorsal view), 83 epigyne (ventral view). Abbreviations: E embolus.

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Short description. Male. Total length—2.40 . Carapace 1.15 long, 0.93 wide, dirty red, cephalic division unmodified, with a group of small bristles (Fig. 78). Chelicerae 0.38 long. Legs pale yellow. Leg I, 3.29 long (1.00+0.28+0.88+0.63+0.50), IV—3.59 long (1.0++0.30+0.93+0.88+0.48). Chaetotaxy 2.2.1.1. Mt I–IV each with a trichobothrium. Ti and Mt I–II (in male sex only!) with sparse long hairs situated almost at right angle to leg segment. TmI—0.71. Palp (Figs 79–82): Palpal tibia with a large lateral outgrowth. Distal part of paracymbium with several short spines. Ventral part of tegulum weakly sclerotised, almost white, protegulum membranous. Suprategular apophysis small. Radix of embolic division broad, V-shaped, carrying a dark tooth. Embolus relatively short. Opisthosoma 1.28 long, 0.88 wide, dark grey, with a pale, scarcely visible, median stripe dorsally.

Female. Total length—2.23. Carapace 1.08 long, 0.80 wide, unmodified. Chelicerae 0.40 long. Leg I, 3.16 long (0.85+0.28+0.80+0.75+0.48), IV—3.51 long (1.00+0.30+0.88+0.88+0.45). TmI—0.70. Opisthosoma 1.25 long, 0.80 wide. Epigynal plate pyriform, as in Fig. 83. Body and leg colouration, chaetotaxy as in male.

Himalaphantes grandiculus (Tanasevitch 1987)

Material: 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 2500–2600 m, 25.–26.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF), same, above Houshenzi, mixed coniferous/*Rhododendron* forest, 3050 m, 14.–15.VI.1997, leg. P. Jäger & J. Martens.

Hypselistes acutidens Gao, Sha & Zhu 1989

Material: 3 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger; 3 ♀ (SMF), same, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger.

Maso sundevalli (Westring 1851)

Material: 2 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger; 2 ♂, 1 ♀ (SMF) , same, S flanks of Taibai Shan, between Houshenzi and Laoxiancheng, riverside, secondary broadleaved forest, 1300 m, 19.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF) , same, between Houshenzi and Laoxiancheng, riverside, secondary broadleaved forest, 1300 m, 19.VI.1997, leg. J. Martens & P. Jäger.

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***Micrargus subaequalis* (Westring 1851)**

Material: 1 ♂, 1 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger.

***Microneta viaria* (Blackwall 1841)**

Material: 1 ♂ (SMF), China, Qinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI.1996, leg. J. Martens; 1 ♀ (SMF), Shaanxi Prov., S flanks of Taibai Shan, between Houshenzi and Laoxiancheng, riverside, secondary broadleaved forest, 1300 m, 19.VI.1997, leg. J. Martens & P. Jäger.

?*Neriene aquilirostralis* Chen & Zhu 1989

Material: 1 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger.

Taxonomic remarks. I am not absolutely confident about the identity of this material. In general, the genus *Neriene* Blackwall 1833 is among the first in the Chinese fauna that requires revision.

***Neriene calozonata* Chen & Zhu 1989**

Material: 2 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger.

***Neriene emphana* (Walckenaer 1841)**

Material: 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 20.VI.1997, leg. J. Martens & P. Jäger; 2 ♂ (SMF), same, above Houshenzi, primary broadleaved forest, 1700–2600 m, 8.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), same, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 19.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 7.VI.1997, leg. J. Martens & P. Jäger; 1 ♂, 3 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 3.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), same,

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above Houshenzi, secondary broadleaved forest, 1300–1700 m, 23.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), Sichuan Prov., Omei Shan, 1000–2200 m, 25.V.–16.VI.1998 Martens.

Neriene japonica **(Oi 1960)**

Material: 1 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger.

Neriene zanhuangica **Zhu & Tu 1986**

Material: 3 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 17.VI.1997, leg. J. Martens & P. Jäger; ♀ (SMF), same, above Houshenzi, primary broadleaved forest, 1700–2600 m, 22.VI.1997, leg. J. Martens & P. Jäger; 5 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 17.VI.1997, leg. J. Martens & P. Jäger; 3 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 8.VI.1997, leg. P. Jäger & J. Martens.

Parasisis amurensis **Eskov 1984**

Material: 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 2500–2600 m, 25–26.VI.1997, leg. J. Martens & P. Jäger.

Pocadicnemis pumila **(Blackwall 1841)**

Material: 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 1700–2000 m, 10.VI.1997, leg. J. Martens & P. Jäger.

Porrhomma pygmaeum **(Blackwall 1834)**

Material: 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, mixed coniferous/*Rhododendron* forest, 3050 m, 14–15.VI.1997, leg. P. Jäger & J. Martens.; 4 ♂, 6 ♀ (SMF), Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI. 1996, leg. J. Martens.

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***Scotargus pilosus* Simon 1913**

Material: 1 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, primary broadleaved forest, 2500–2600 m, 25.–26.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF), same, above Houshenzi, mixed coniferous/*Rhododendron* forest, 3050 m, 14.–15.VI.1997, leg. P. Jäger & J. Martens.

***Sinolinyphia cyclosoides* Wunderlich & Li 1995**

Material: 2 ♀ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 8.VI.1997, leg. J. Martens & P. Jäger; 1 ♂, 4 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 17.VI.1997, leg. J. Martens & P. Jäger; 1 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 20.VI.1997, leg. J. Martens & P. Jäger; 2 ♀ (SMF), same, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 8.VI.1997, leg. J. Martens & P. Jäger.

***Tchatkalophantes huangyuanensis* (Zhu & Li 1983) comb. n.**

Lepthyphantes huangyuanensis Zhu & Li 1983: 144.

Material: 2 ♂, 2 ♀ (SMF), China, Quinghai Prov., Koko Nor Lake, southern shore, near Heimane, 3200–3250 m, 9.–21.VI.1996, leg. J. Martens.

Taxonomic remarks. According to its genitalic structure, this species certainly belongs to the genus *Tchatkalophantes* Tanasevitch 2001, being clearly defined by the shape of the epigynal pseudoscape: it is widened at the base and narrowed distad, vice versa in other congeners (see Tanasevitch 2001).

***Tibioploides stigmosus* (Xia, Zhang, Gao, Fei, Rui & Kim 2001) comb. n.**
Figs 84–90

Araeoncus stigmosus Xia & *al*. 2001: 164 (male only!).

Material: 1 ♂, 2 ♀ (SMF), China, Quinghai Prov., Bei Shan National Park, 120 km NE Xining, 2300–2700 m, 23.V.–8.VI.1996, leg. J. Martens.

Taxonomic remarks. This species was described from Gansu Province, China as *Araeoncus stigmosus* from both sexes (Xia *et. al*. 2001). According to the published figures, the female of this species belongs to the genus *Dicymbium* Menge 1868, not *Tibioploides* Eskov & Marusik 1991, and is probably referred to *D. sinofacetum* **sp. n.**

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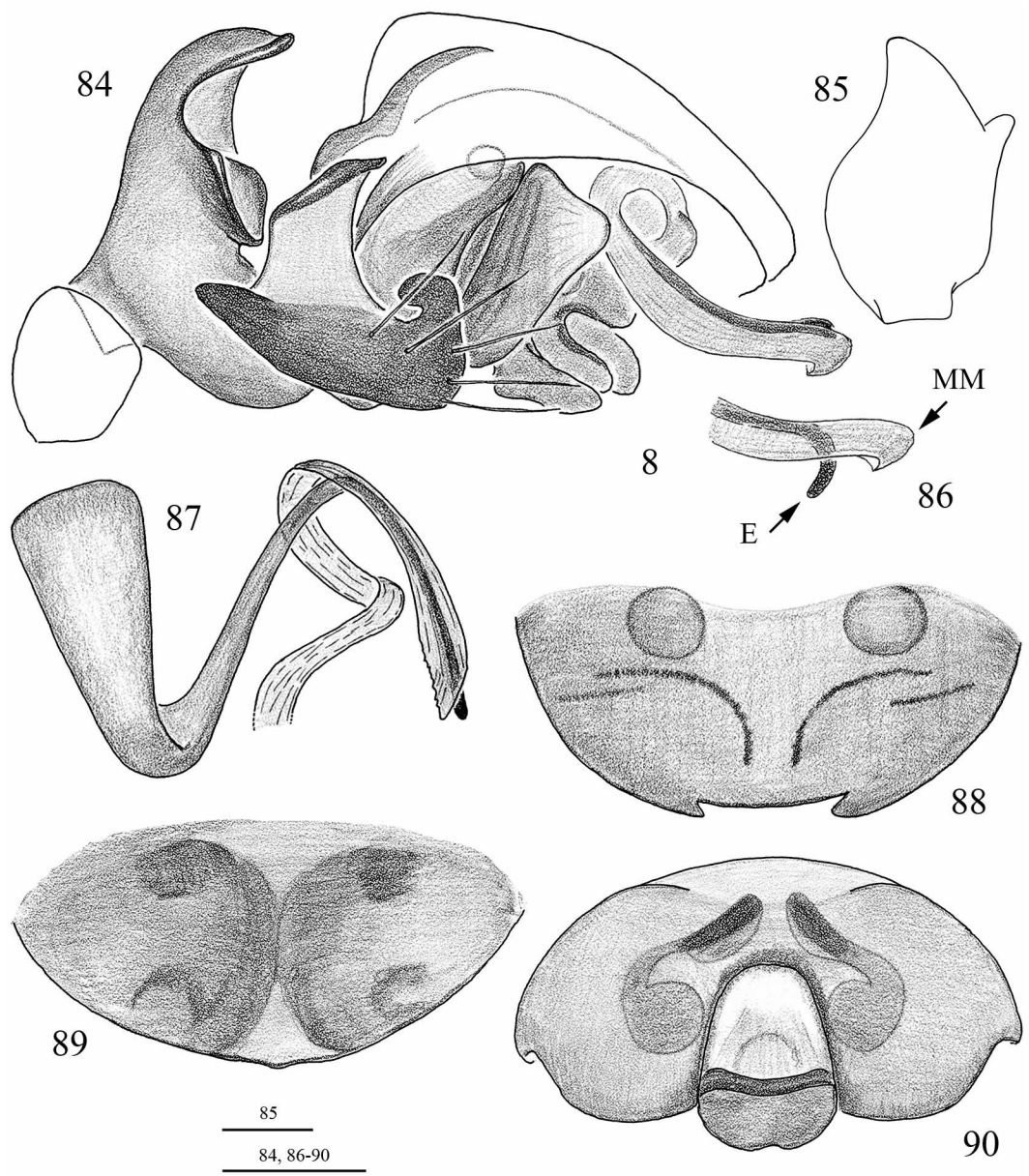

FIGURES 84–90. *Tibioploides stigmosus* (Xia, Zhang, Gao, Fei, Rui & Kim 2001) **comb. n.** 84 right palp (retrolateral view), 85 palpal tibia (dorsal view), 86 tip of median membrane and embolus (lateral view), 87 median membrane and embolic division (ventral view), 88–90 epigyne (88, 89 ventral view, 90 dorsal view). Abbreviations: E embolus, MM median membrane.

Tibioploides stigmosus, together with the Japanese *T. monticola* Saito & Ono 2001 and *T. eskovianus* Saito & Ono 2001, comprise a homogeneous species-group which is characterised by the very long and well-sclerotised median membrane conducting the long and slender embolus over all its extent. The epigynes of these species are similar but differ in shape of the dorsal plate.

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Short description. Male. Total length—2.60. Carapace 1.40 long, 1.00 wide, brownish red. Chelicerae 0.50 long. Legs pale yellowish red. Leg I, 3.41 long (1.00+0.30+0.85+0.73+0.53), IV—3.39 long (1.00+0.28+0.88+0.73+0.50). Chaetotaxy 2.2.2.1. Mt I–III each with a trichobothrium. TmI—0.29. Palp (Figs 84–87): Paracymbium massive, anchor-shaped. Embolus long and slender, median membrane well-sclerotised, conducting the embolus all along its extent. Tip of embolus may be curved as in Fig. 86. Opisthosoma 1.33 long, 1.00 wide, grey.

Female. Total length—2.55. Carapace 1.20 long, 0.90 wide. Chelicerae 0.55 long. Leg I, 3.11 long (0.90+0.33+0.75+0.68+0.45), IV—3.18 long (0.95+0.30+0.80+0.68+0.45). TmI—0.33. Opisthosoma 1.45 long, 1.10 wide. Epigyne as in Figs 88–90: relatively large, dark; dorsal plate small, distal edge thickened and slightly incurved. Body and leg colouration, chaetotaxy as in male.

This is the first description of the female sex.

Ummeliata feminea Bösenberg & Strand 1906

Material. 1 ♂ (SMF), China, Shaanxi Prov., S flanks of Taibai Shan, above Houshenzi, secondary broadleaved forest, 1300–1700 m, 8.VI.1997, leg. J. Martens & P. Jäger; 1 ♂ (SMF), Shaanxi Prov., Xian City, 900 m, 5.VII.1977, leg. J. Martens & P. Jäger.

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