

SUPPLEMENTARY MATERIALS

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Materials and methods

Specimens were examined and measured with a Leica M205 C stereomicroscope. Left male pedipalps were photographed (exceptions are indicated in figure legends). Epigynes were photographed before dissection. Vulvae were treated in a 10% warm solution of potassium hydroxide (KOH) to dissolve soft tissues before illustration. Images were captured with a Canon EOS 750D wide zoom digital camera (24.2 megapixels) mounted on the stereomicroscope mentioned above and assembled using Helicon Focus 3.10.3 image stacking software (Khmelik et al., 2005). All measurements are given in millimeters (mm). Leg measurements are shown as: total length (femur, patella, tibia, metatarsus, tarsus). Leg podomeres were measured on their dorsal side. The distribution map was generated with ArcGIS 10.2 (ESRI Incorporated Company). References to figures in the cited papers are listed in lowercase (figure or figures); figures from this paper are noted with a capital letter (Figure or Figures). The specimens studied are preserved in 75% ethanol and deposited in the College of Life Science, Shenyang Normal University (SYNU) in Liaoning, China, the Institute of Zoology, Chinese Academy of Sciences (IZCAS) in Beijing, China, and the Museum of Hebei University (MHBU) in Hebei, China. Terminology and taxonomic descriptions follow Huber (2011) and Yao et al. (2015, 2021). All the new species are registered in Zoobank at <http://zoobank.org/>. The following abbreviations are used in the descriptions: ALE = anterior lateral eye, AME = anterior median eye, PME = posterior median eye, L/d = length/diameter ratio; used in the illustrations: b = bulb, da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, pr = procursus, u = uncus.

Genomic DNA extraction and amplification were performed as in Yao et al. (2016). We targeted three DNA fragments for sequencing: the mitochondrial gene fragment encoding *COI* and two nuclear gene fragments encoding *H3* and *wnt*. Two species *P. paralinzhou* Zhang & Zhu, 2009 and *P. taishan* Song & Zhu, 1999 were selected as outgroups. Primers are listed in the Supplementary Table S1 (Folmer et al., 1994; Colgan et al., 1998; Blackledge et al., 2009). DNA sequences were checked and edited with BioEdit 7.2.2 (Hall, 1999). Bayesian inference (BI) and maximum likelihood (ML) methods were used to reconstruct phylogenetic trees using both *COI* and a combined dataset. BI analysis was performed with MrBayes 3.2.4 (Ronquist et al., 2012). The GTR + I + G model was recommended for all partitions (Nylander, 2004). Two simultaneous runs of four Monte Carlo Markov chains (MCMCs) with default heating parameters were performed for 5 million generations. Trees were sampled every 1000 generations with the first 25% of sampled trees discarded as burn-in. The results were checked using Tracer 1.6 (Rambaut & Drummond 2014) to ensure stationarity. ML analysis was conducted using RAxML 8.2.9 (Stamatakis, 2014) under a GTRCAT model for all partitions, with 500 rapid bootstrap replicates followed by a thorough maximum-likelihood tree search.

We applied four methods of molecular species delimitation. (1) Automatic barcode gap discovery (ABGD) examines species delimitation with recursive partitioning using a range of prior intraspecific divergence and relative gap widths, estimating the threshold between intra- and interspecific genetic variation to generate species-level groupings. The ABGD analyses were conducted using both Jukes-Cantor and Kimura 2-P distance matrices with options: Pmin=0.001, Pmax=0.1, Steps=10, X=1.0, Nb bins=20 (Puillandre et al., 2012). (2) The Bayesian implementation of the Poisson Tree Processes (bPTP) model tests species boundaries based on phylogenetic trees of individual genes. The bPTP method uses nucleotide substitution information

and implements a model assuming phylogenetic tree branch lengths are generated by two classes of Poisson processes (intra- and interspecific branching events). This analysis was conducted on a web server (<http://species.h-its.org/ptp/>) using individual gene trees. The MCMC was run for 100,000 generations, with a thinning of 100 and burn-in of 0.2 (Zhang et al., 2013). (3) The general mixed Yule coalescent (GMYC) model delimits species from an ultrametric tree of individual gene without prior definitions of species. The phylogenetic tree of individual gene was converted to an ultrametric format using BEAST 1.8.2 (Drummond et al., 2012). The GMYC method identifies a time point on the best tree (the tree with the highest likelihood) where the branching rate shifts from speciation to the population coalescent process. This analysis was performed under the single-threshold model using the R 4.0.3 package SPLITS (Species Limits by Threshold Statistics) (R Development Core Team, 2020). (4) Bayesian Phylogenetics and Phylogeography (BPP), is a multilocus coalescent species delimitation analysis, which requires data from multiple genes and pre-defined candidate species (Rannala & Yang, 2003; Yang & Rannala, 2010). The BPP method accommodates the species phylogeny as well as lineage sorting due to ancestral polymorphism and estimates the posterior distribution for different species delimitation models. We used BPP to test apparently conflicting results between the analyses mentioned above. Similar to Leaché and Fujita (2010), we conducted four different sets of analyses with different values of α and β : (i) $G\theta(1, 10)$ and $G\tau(1, 10)$, assuming large ancestral population sizes and deep divergences between species, (ii) $G\theta(2, 2000)$ and $G\tau(2, 2000)$, assuming small ancestral populations and shallow divergences, (iii) $G\theta(1, 10)$ and $G\tau(2, 2000)$, assuming large ancestral populations and shallow divergences, (iv) $G\theta(2, 2000)$ and $G\tau(1, 10)$, assuming small ancestral populations and deep divergences. The analyses were performed with the following settings: species delimitation = 1, algorithm = 0, finetune = 5. The reversible-jump MCMC analyses were run for 100,000 generations and sampled every two generations, with 25,000 samples discarded as burn-in. Each set of α and β was run at least twice to confirm consistency.

Results of species delimitation

A total of 264 sequences from 88 ingroup members and four sequences from two outgroups were successfully generated. The alignment did not include any gaps. The complete dataset included 1209 base pairs (bp): 607 bp of *COI*, 307 bp of *H3*, and 295 bp of *wnt*. The sequences are deposited in GenBank under accession Nos. ON375115–ON375294 and ON380769–ON380856 (Supplementary Table S2). Separate analyses of *COI* and the analysis of the concatenated dataset found largely compatible topologies. The BI and ML analyses of the concatenated dataset supported the same topology and Supplementary Figure S1B presents the tree from the ML analysis. The ABGD analysis identified 30 provisional species and the result was fairly consistent with morphology (Supplementary Figure S1B: blue and purple boxes). The bPTP analysis identified 29 species (Supplementary Figure S1B: green boxes); compared to morphology and ABGD, *P. kuaile* **sp. nov.** and *P. tongyaoi* Wang & Yao, 2020 were recognized as a single species (Supplementary Figure S1B: numbers 28, 29; Supplementary Figure S37A). The result of the GMYC analysis was also highly consistent with morphology and the ABGD (Supplementary Figure S1B: yellow boxes), except for three known species *P. wangxidong* Zhang & Zhu, 2009, *P. zhuolu* Zhang & Zhu, 2009 and *P. datan* Tong & Li, 2010; each of them is from one species population and each was divided into two species (Supplementary Figure S1B: numbers 3, 10, 25;

Supplementary Figure S37B). *P. kuaile* **sp. nov.** and *P. tongyaoi*, considered one species in bPTP, were validated as two separate species in the BPP analyses, and the BPP analyses found high probabilities of speciation events using four prior combinations (Supplementary Figure S1B: orange boxes).

Considering all of the molecular evidence, we conclude that there are 30 provisional species. The ABGD analysis supports speciation events among the 30 species, and the result is fairly consistent with morphology. Although bPTP collapsed *P. kuaile* **sp. nov.** and *P. tongyaoi* to a single species, the ABGD, GMYC and BPP results clearly support their status as separate species. Furthermore, *P. kuaile* **sp. nov.** can be easily distinguished morphologically from *P. tongyaoi* by the spine-shaped prolateral apophysis of the procurus, which is long and the angular ventral sclerite of the procurus not curved distally, and by the vulval anterior arch nearly u-shaped, and the vulval pore plate close to one another. The GMYC analysis divided each of three known species, *P. wangxidong*, *P. zhuolu* and *P. datan*, into two species. Nevertheless, this delimitation result is unreasonable because each of them is from one population. In addition, a single speciation event for each species is well supported, by both ABGD and bPTP. Moreover, the morphological characters of specimens from the same population are also consistent. Finally, although five species, *P. xinglong* **sp. nov.**, *P. exilis* Tong & Li, 2010, *P. suizhongicus* Zhu & Song, 1999, *P. auricularis* Zhang, Zhang & Liu, 2016 and *P. papillatus* Zhang, Zhang & Liu, 2016, were not included in our molecular analyses due to a lack of DNA data, their diagnostic morphological characters shown in the supplementary materials clearly suggest that they are separate species. For detailed morphological descriptions, diagnoses and illustrations of all species of the *P. phungiformes* group from the Yanshan-Taihang Mountains, see Supplementary Taxonomic account and Figures S1–S36.

Taxonomic account

Family Pholcidae C.L. Koch, 1850

Subfamily Pholcinae C.L. Koch, 1850

Genus *Pholcus* Walckenaer, 1805

Type species: *Aranea phalangioides* Fuesslin, 1775

***Pholcus phungiformes* species group**

Diagnosis and description: See Huber (2011) and Yao et al. (2021).

Known number of species and distribution:

The Yanshan-Taihang Mountains in northern China: 35 species, including 13 new species.

The Changbai Mountains at the border between northeastern China and North Korea: 26 species.

The Taebaek Mountains on the Korean Peninsula: 32 species.

The Maritime Territory, Sakhalin Island, and Kurile Islands in Russia: 1 species.

***Pholcus alloctospilus* Zhu & Gong, 1991**

Pholcus alloctospilus Zhu & Gong, 1991: 18, figure 2A–G. Song, Zhu & Chen, 1999: 52, figure 22P–S. Song, Zhu & Chen, 2001: 72, figure 29A–G. Zhang & Zhu, 2009a: 11, figure 1A–G. Huber, 2011: 463, figures 2108–2110, 2132, 2133, 2218–2223. Yao & Li, 2012: 7, figures 13A–D, 14A–C.

Type material examined: ‘Allotype’: ♂ (only genitalia examined; MHBUS), China, Hebei, Shijiazhuang, Lingshou County, Man Mountain (38°20.00'N, 114°30.00'E), 26 May 1986, Ming-Sheng Zhu leg. **Paratypes:** 1♂, 1♀ (MHBUS), same data as ‘allotype’.

Other material examined: 1♂ (SYNU-Ar00145), 2♀ (SYNU-Ar00146, Ar00147), China, Hebei, Baoding, Fuping County, Longquanguan Town, Liaodaobei Village (38°54.02'N, 113°50.58'E, 847 m), 6 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. auricularis* Zhang, Zhang & Liu, 2016 in having similar male chelicerae, uncus, and epigyne (figures 2218, 2221, 2222 in Huber, 2011, figures 13A, 14A in Yao & Li, 2012; female genitalia was mismatched in *P. auricularis*, see remarks in *P. auricularis* and *P. curvus* below) but can be easily distinguished by procursus with small, angular prolatero-subdistal apophysis (figure 2220 in Huber, 2011, figure 13C in Yao & Li, 2012; large prolatero-subdistal apophysis with pointed tip in *P. auricularis*, figures 9C, 11C in Zhang et al., 2016) and retrolatero-subdistal protrusion (figure 13D in Yao & Li, 2012; absent in *P. auricularis*, figures 9D, 11D in Zhang et al., 2016), by vulval anterior arch with large sclerite (figure 2223 in Huber, 2011, figure 14B in Yao & Li, 2012; absent in *P. auricularis*, figures 6F, 8G in Zhang et al., 2016), and by pore plates elliptic (figure 2223 in Huber, 2011, figure 14B in Yao & Li, 2012; long and narrow in *P. auricularis*, figures 6F, 8G in Zhang et al., 2016).

Description: See Zhang & Zhu (2009a) and Huber (2011).

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus auricularis* Zhang, Zhang & Liu, 2016**

Pholcus auricularis Zhang, Zhang & Liu, 2016: 66, figures 9A–D, 10A–F, 11A–D, 12A–G.

Holotype: ♂ (MHBUS), China, Hebei, Baoding, Fuping County, Longquanguan Town, Liaodaobei Village (38°16.00'N, 114°17.00'E, 1050 m), 5 August 2014, Bao-Shi Zhang leg. **Paratypes:** 6♀ (MHBUS), same data as holotype. (not examined)

Diagnosis: The species resembles *P. alloctospilus* Zhu & Gong, 1991 in having similar male chelicerae, uncus, and epigyne (figures 6E, 8F, 10A, C, 12D in Zhang et al., 2016) but can be easily distinguished by procursus with large prolatero-subdistal apophysis with pointed tip (figures 9C, 11C in Zhang et al., 2016; small, angular prolatero-subdistal apophysis in *P. alloctospilus*, figure 2220 in Huber, 2011, figure 13C in Yao & Li, 2012) and without retrolatero-subdistal protrusion (figures 9D, 11D in Zhang et al., 2016; present in *P. alloctospilus*, figure 13D in Yao & Li, 2012), by vulval anterior arch without sclerite (figures 6F, 8G in Zhang et al., 2016; present in *P. alloctospilus*, figure 2223 in Huber, 2011, figure 14B in Yao & Li, 2012), and by pore plates long and narrow (figures 6F, 8G in Zhang et al., 2016; elliptic in *P. alloctospilus*, figure 2223 in Huber, 2011, figure 14B in Yao & Li, 2012).

Description: See Zhang et al. (2016).

Distribution: China (Hebei, Figure S1A).

Remarks: The female of this species in the original publication (figures 10E, F, 12F, G in Zhang et al., 2016, misidentification) should be assigned to *P. curvus*, because the morphological characters of the female genitalia are consistent with those of the specimens from both localities of

P. curvus in this paper (Figure S8B, C, see remarks in *P. curvus* below). Unfortunately, we have not collected any *P. auricularis*, so the true female of this species is unknown. Nevertheless, we consider that this one might be in figures 6E, F, 8F, G of *P. curvus* in Zhang et al. (2016), because the localities of *P. auricularis* and *P. curvus* in Zhang et al. (2016) are very close to each other. In addition, in the figures 6F, 8G in Zhang et al. (2016), the true pore plates are obviously not the indicated anterior sclerites arrow but the lateral, long and narrow structures (with pores).

***Pholcus babao* Tong & Li, 2010**

Figure S2

Pholcus babao Tong & Li, 2010: 36, figures 1A–C, 3A–F.

Type material examined: Holotype: ♂ (IZCAS), China, Hebei, Chengde, Fengning County, Baiyungudong Scenic Area, Babao Cave (41°2.26'N, 116°54.35'E, 530 m), 2 April 2005, Shu-Qiang Li, Kai Meng, Xiang Xu, Yu-Chi Zheng & Qian Wang leg. **Paratypes:** 1♂, 1♀ (IZCAS), same data as holotype.

Other material examined: 1♂ (SYNU-Ar00148), 1♀ (SYNU-Ar00149), China, Hebei, Chengde, Fengning County, Heishanzui Town, Heishan Village, Baiyungudong Scenic Spot (41°2.35'N, 116°54.93'E, 451 m), 31 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. datan* Tong & Li, 2010 in having similar male chelicerae and epigyne (figure 3C, E in Tong & Li, 2010) but can be easily distinguished by procurus with pointed, sclerotized prolateral apophysis (arrow 1 in Figure S2C; sclerotized prolateral apophysis curved in *P. datan*, arrow 1 in Figure S9C), dorsal membranous process (arrow 3 in Figure S2C; dorsal apophysis distally bifurcated *P. datan*, arrow 2 in Figure S9C), and prolateral membranous process (arrow 2 in Figure S2C; absent in *P. datan*, Figure S9C), without ventral sclerite (Figure S2C; present in *P. datan*, arrow 3 in Figure S9C), by uncus angular distally, proximal apophysis with subdistal apophysis (Figure S2A; uncus curved distally, with distally hooked proximal apophysis in *P. datan*, Figure S9A), and by vulval anterior arch slightly curved (Figure S2B; strongly curved in *P. datan*, Figure S9B). Also see diagnosis for *P. luanping* sp. nov.

Description (amended): Male (SYNU-Ar00148). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with long (longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procurus with curved prolateral membranous lamella with pointed, sclerotized prolateral apophysis (arrow 1 in Figure S2C) and prolateral membranous process (arrow 2 in Figure S2C), dorsal membranous process (arrow 3 in Figure S2C), and slender dorsal spine (arrow 4 in Figure S2C). Female (SYNU-Ar00149). Epigyne curved posteriorly, with pair of lateral protrusions. Vulva (Figure S2B) with slightly curved, sclerotized anterior arch, pair of oval pore plates, and pair of curved lateral sclerites.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus beijingensis* Zhu & Song, 1999**

Pholcus beijingensis Zhu & Song, in Song, Zhu & Chen, 1999: 52, figures 22Z, A'–C', 23A–C.

Song, Zhu & Chen, 2001: 73, figure 30A–H. Zhang & Zhu, 2009a: 13, figure 2A–H. Huber, 2011: 469, figures 2150–2151, 2163–2164, 2238–2242. Yao & Li, 2012: 10, figures 29A–D, 30A–C.

Type material examined: Holotype: ♂ (MHBU), China, Beijing, 30 May 1980, Ming-Sheng Zhu leg. **Paratype:** 1♀ (MHBU), same data as holotype.

Other material examined: 1♂ (IZCAS), 1♀ (IZCAS), China, Beijing, Shijiaying Town, Jinjitai, Shenxiandong Cave (39°52.00'N, 115°41.90'E, 579 m), 13 May 2010, Chun-Xia Wang & Zu-Wei Zha leg. 2♂ (IZCAS), 2♀ (IZCAS), China, Beijing, Fangshan District, Xiayunling Town, Sihe Village, Bianfudong Cave (39°43.71'N, 115°45.08'E), 30 October 2010, Zhi-Yuan Yao leg. 1♂ (IZCAS), 1♀ (IZCAS), China, Beijing, Fangshan District, Shangfangshan National Forest Park, Yunshuidong Cave (39°39.99'N, 115°48.44'E), 12 May 2011, Chun-Xia Wang & Zu-Wei Zha leg.

Diagnosis: The species resembles *P. chengde* sp. nov. in having similar epigyne (figure 30A in Yao & Li, 2012) but can be easily distinguished by procursus with small, slightly curved prolateral sclerite (figure 29C in Yao & Li, 2012; prolateral sclerite large and strongly curved in *P. chengde* sp. nov., arrow 1 in Figure S5C) and ventral membranous process (figure 29D in Yao & Li, 2012; absent in *P. chengde* sp. nov., Figure S5B), without distal membranous process (figure 29C in Yao & Li, 2012; present in *P. chengde* sp. nov., arrow 2 in Figure S5C), by uncus strongly curved, with distal apophysis (figure 29A in Yao & Li, 2012; not curved, without distal apophysis in *P. chengde* sp. nov., Figure S6C), by male chelicerae without frontal apophyses (figure 2240 in Huber, 2011; present in *P. chengde* sp. nov., Figure S6D), and by vulval pore plates elliptic (figure 30B in Yao & Li, 2012; nearly triangular in *P. chengde* sp. nov., Figure S6B). Also see diagnosis for *P. tang* sp. nov.

Description: See Zhang & Zhu (2009a) and Huber (2011).

Distribution: China (Beijing, Figure S1A).

***Pholcus brevis* Yao & Li, 2012**

Pholcus brevis Yao & Li, 2012: 12, figures 39A–D, 40A–E, 41A–D, 42A–D.

Type material examined: Holotype: ♂ (IZCAS), China, Beijing, Pinggu District, Xiongerzhai Town, Weijiawan Village, Weijiawan Cave (40°14.96'N, 117°6.98'E, 297 m), 7 January 2012, Zu-Wei Zha & Zhi-Gang Chen leg. **Paratypes:** 2♀ (IZCAS), same data as holotype.

Other material examined: 1♂ (SYNU-Ar00150), 2♀ (SYNU-Ar00151, Ar00152), China, Beijing, Pinggu District, Xiongerzhai Town, Weijiawan Village, roadside of Pingcheng Road (40°15.28'N, 117°7.35'E, 209 m), 14 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. jinniu* Tong & Li, 2010 in having similar male chelicerae and epigyne (figures 40A, 41C, D, 42C in Yao & Li, 2012) but can be easily distinguished by procursus with spine-shaped ventral apophysis (figures 39C, 42A in Yao & Li, 2012; spine-shaped prolateral apophysis in *P. jinniu*, arrow 2 in Figure S21C), by uncus ear-shaped (figures 39A, 41A in Yao & Li, 2012; uncus distally strongly protruding in *P. jinniu*, Figure S21A), and by vulval pore plates wide anteriorly and pointed posteriorly (figures 40B, 42D in Yao & Li, 2012; long and narrow in *P. jinniu*, Figure S21B).

Description (amended): Male (SYNU-Ar00150). Pedipalpal femur with distinct ventral

protuberance; procursus with disto-dorsal sclerite, sclerotized prolateral apophysis with membranous process, and spine-shaped ventral apophysis.

Natural history: The species was found on rock walls.

Distribution: China (Beijing, Figure S1A).

***Pholcus changchi* Yao, Li & Lu, sp. nov.**

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Figures S3, S4

Holotype: ♂ (SYNU-Ar00153), China, Shanxi, Yangquan, Yu County, Changchi Town, Cangshan Village, Cangshan Scenic Spot (38°13.30'N, 113°20.65'E, 951 m), 10 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratype: 1♀ (SYNU-Ar00154), same data as holotype.

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

Diagnosis: The new species resembles *P. pennatus* Zhang, Zhu & Song, 2005 in having similar male chelicerae, bulbal apophyses, and epigyne (Figure S4A, C, D) but can be easily distinguished by procursus with wide prolateral apophysis (arrow 3 in Figure S3C, arrow 2 in Figure S3D; prolateral apophysis slender in *P. pennatus*, figure 142C, D in Yao & Li, 2012) and flat prolateral membranous lamella (arrow 2 in Figure S3C; prolateral membranous lamella strongly curved in *P. pennatus*, figure 142C in Yao & Li, 2012), by vulval anterior arch laterally narrow (Figure S4B; large and laterally nearly triangular in *P. pennatus*, figure 143B in Yao & Li, 2012), and by pore plates nearly elliptic (pointed anteriorly and blunt posteriorly, Figure S4B; nearly round in *P. pennatus*, figure 143B in Yao & Li, 2012).

Description of holotype: Male (SYNU-Ar00153). Total length 5.47 (5.70 with clypeus), carapace 1.41 long, 1.92 wide, opisthosoma 4.06 long, 1.63 wide. Leg I: 43.52 (9.10, 0.71, 11.72, 19.37, 2.62), leg II: 30.53 (8.48, 0.73, 7.87, 11.88, 1.57), leg III: 21.35 (6.27, 0.67, 5.18, 8.02, 1.21), leg IV: 28.61 (8.46, 0.69, 7.27, 10.72, 1.47); tibia I L/d: 73. Eye interdistances and diameters: PME-PME 0.23, PME 0.15, PME-ALE 0.07, AME-AME 0.06, AME 0.09. Sternum width/length: 1.21/1.01. Habitus as in Figure S4E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brown marks; sternum yellowish, with brown marks. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S4D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S3A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with sclerotized, angular ventral apophysis (arrow 1 in Figure S3C), flat prolateral membranous lamella (arrow 2 in Figure S3C), sclerotized prolateral apophysis (arrow 3 in Figure S3C, arrow 2 in Figure S3D), slender dorsal membranous process (arrow 4 in Figure S3C), and dorsal spine (arrow 1 in Figure S3D); uncus ear-shaped, with scales (Figure S4C); ‘pseudo-appendix’ semi-transparent (arrow in Figure S3A); embolus weakly sclerotized, with some transparent distal projections (Figure S4C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and

tarsi; tarsus I with 36 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00154). Similar to male, habitus as in Figure S4G, H. Total length 5.12 (5.34 with clypeus), carapace 1.44 long, 1.82 wide, opisthosoma 3.68 long, 1.66 wide; tibia I: 8.01; tibia I L/d: 47. Eye interdistances and diameters: PME-PME 0.22, PME 0.13, PME-ALE 0.06, AME-AME 0.05, AME 0.09. Sternum width/length: 1.11/0.96. Clypeus dark brown. Epigyne (Figure S4A) with median brown marks and knob. Vulva (Figure S4B) with W-shaped, sclerotized anterior arch, pair of nearly elliptic pore plates (pointed anteriorly and blunt posteriorly), and pair of lateral sclerites.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, type locality; Figure S1A).

***Pholcus chengde* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: 7393BD56-52EB-4086-B376-47C264574BEF

Figures S5, S6

Holotype: ♂ (SYNU-Ar00155), China, Hebei, Chengde, Xinglong County, Dayingzi Town, roadside of S358 (40°36.98'N, 117°57.20'E, 418 m), 28 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00156), 2♀ (SYNU-Ar00157, Ar00158), same data as holotype.

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

Diagnosis: The new species resembles *P. beijingensis* Zhu & Song, 1999 in having similar epigyne (Figure S6A) but can be easily distinguished by procurus with large, strongly curved prolateral sclerite (arrow 1 in Figure S5C; prolateral sclerite small and slightly curved in *P. beijingensis*, figure 29C in Yao & Li, 2012) and distal membranous process (arrow 2 in Figure S5C; absent in *P. beijingensis*, figure 29C in Yao & Li, 2012), without ventral membranous process (Figure S5B; present in *P. beijingensis*, figure 29D in Yao & Li, 2012), by uncus not curved, without distal apophysis (Figure S6C; strongly curved and with distal apophysis in *P. beijingensis*, figure 29A in Yao & Li, 2012), by male chelicerae with frontal apophyses (Figure S6D; absent in *P. beijingensis*, figure 2240 in Huber, 2011), and by vulval pore plates nearly triangular (Figure S6B; elliptic in *P. beijingensis*, figure 30B in Yao & Li, 2012).

Description of holotype: Male (SYNU-Ar00155). Total length 4.16 (4.47 with clypeus), carapace 1.12 long, 1.68 wide, opisthosoma 3.04 long, 1.44 wide. Leg I: 35.96 (9.32, 0.64, 9.26, 14.82, 1.92), leg II: 24.82 (6.99, 0.60, 6.08, 9.70, 1.45), leg III: 17.61 (5.09, 0.56, 4.26, 6.61, 1.09), leg IV: 22.96 (6.80, 0.60, 5.68, 8.56, 1.32); tibia I L/d: 65. Eye interdistances and diameters: PME-PME 0.21, PME 0.14, PME-ALE 0.06, AME-AME 0.04, AME 0.06. Sternum width/length: 1.10/0.93. Habitus as in Figure S6E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brownish marks; sternum brown. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S6D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S5A, B; trochanter with short (as wide as long), retrolaterally bulged ventral apophysis; femur with distinct ventral protuberance; tibia with prolatero-ventral projection; procurus simple proximally but complex distally, with curved prolateral sclerite

(arrow 1 in Figure S5C) with distal membranous process (arrow 2 in Figure S5C), sclerotized ventral apophysis (arrow 3 in Figure S5C), and two strong and one slender dorsal spines (arrow 4 in Figure S5C); uncus with scales (Figure S6C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S6C). Retrolateral trichobothrium of tibia I at 7% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 23 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00157). Similar to male, habitus as in Figure S6G, H. Total length 4.68 (4.92 with clypeus), carapace 1.40 long, 1.74 wide, opisthosoma 3.28 long, 1.94 wide; tibia I: 8.64; tibia I L/d: 57. Eye interdistances and diameters: PME-PME 0.20, PME 0.16, PME-ALE 0.06, AME-AME 0.06, AME 0.09. Sternum width/length: 1.08/0.85. Clypeus dark brown. Epigyne (Figure S6A) curved posteriorly, with brown marks and knob. Vulva (Figure S6B) with strongly curved anterior arch, pair of nearly triangular pore plates, and pair of lateral sclerites.

Variation: Tibia I in paratype male (SYNU-Ar00156): 10.81. Tibia I in another paratype female (SYNU-Ar00158): 8.12.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus chicheng* Tong & Li, 2010**

Figure S7

Pholcus chicheng Tong & Li, 2010: 36, figures 1D–F, 4A–F.

Type material examined: Holotype: ♂ (IZCAS), China, Hebei, Zhangjiakou, Chicheng County, Dahaituo National Natural Reserve (40°34.93'N, 115°46.06'E), 5 November 2005, Qian Wang, Yan-Jing Song & Guo Zheng leg. **Paratypes:** 18♂, 10♀ (IZCAS), same data as holotype.

Other material examined: 2♂ (SYNU-Ar00159, Ar00160), 2♀ (SYNU-Ar00161, Ar00162), China, Hebei, Zhangjiakou, Chicheng County, Dahaituo Town, Shijia Village (40°36.70'N, 115°43.80'E, 1056 m), 4 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. huailai* sp. nov. in having similar male chelicerae and epigyne (figure 4D, E in Tong & Li, 2010) but can be easily distinguished by procurus with spine-shaped prolateral apophysis (arrow 2 in Figure S7C; absent in *P. huailai* sp. nov., Figure S17C), by uncus with long and thick proximal apophysis (arrow 1 in Figure S7A; angular proximal apophysis in *P. huailai* sp. nov., arrow 1 in Figure S18C), by ‘pseudo-appendix’ distally bifurcated (arrow 2 in Figure S7A; not bifurcated in *P. huailai* sp. nov., arrow 2 in Figure S18C), by vulval anterior arch wavy (Figure S7B; nearly trapezoidal in *P. huailai* sp. nov., Figure S18B), and by pore plates long elliptic (Figure S7B; oval in *P. huailai* sp. nov., Figure S18B).

Description (amended): Male (SYNU-Ar00159). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and distinct ventral protuberance; tibia with prolatero-ventral projection; procurus with curved, sclerotized prolateral apophysis (arrow 1 in Figure S7C), spine-shaped prolateral apophysis (arrow 2 in Figure S7C), prolateral membranous process (arrow 3 in Figure S7C), large dorsal sclerite (arrow 4 in Figure S7C), sclerotized ventral apophysis (arrow 5 in Figure S7C), and slender dorsal spine (arrow 6 in Figure S7C); uncus

curved distally, with scales and thick proximal apophysis (arrow 1 in Figure S7A); ‘pseudo-appendix’ distally bifurcated (arrow 2 in Figure S7A). Female (SYNU-Ar00161). Epigyne strongly curved posteriorly, with lateral brown marks and large knob. Vulva (Figure S7B) with wavy, sclerotized anterior arch, pair of long elliptic pore plates, and pair of lateral sclerites.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus clavimaculatus* Zhu & Song, 1999**

Pholcus clavimaculatus Zhu & Song, in Song, Zhu & Chen, 1999: 57, figure 23P–U. Zhu & Tso, 2002: 154, figure 4A–D. Zhang & Zhu, 2009a: 20, figures 6A–H, 7A–I. Huber, 2011: 466, figures 2155, 2229–2232. Yao & Li, 2012: 13, figures 47A–D, 48A–C.

Type material examined: Holotype: ♂ (only right pedipalpus examined; MHBUE), China, Liaoning, Suizhong County, 26 August 1987, Ji-Dong Guan leg.

Other material examined: 1♂ (SYNU-Ar00163), 2♀ (SYNU-Ar00164, Ar00165), China, Hebei, Zhangjiakou, Yu County, Xiaowutaishan Mountain, Jinhekou Scenic Spot (39°56.56'N, 114°56.85'E, 1199 m), 4 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. luya* Peng & Zhang, 2013 in having similar male chelicerae and vulva (figure 2231 in Huber, 2011, figure 48B in Yao & Li, 2012) but can be easily distinguished by procurus with pointed prolateral apophysis (figure 47D in Yao & Li, 2012; pointed dorsal apophysis in *P. luya*, arrow 2 in Figure S26C), by uncus ear-shaped, with scaly edge (figure 47B in Yao & Li, 2012; S-shaped, without scales in *P. luya*, Figure S26A), and by epigynal plate nearly elliptic in ventral view (figure 48A in Yao & Li, 2012; nearly trapezoidal in *P. luya*, figures 3D, 4E in Peng & Zhang, 2013).

Description: See Zhang & Zhu (2009a) and Huber (2011).

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus curvus* Zhang, Zhang & Liu, 2016**

Figure S8

Pholcus curvus Zhang, Zhang & Liu, 2016: 61, figures 5A–D, 6A–F, 7A–D, 8A–G.

Holotype: ♂ (MHBUE), China, Hebei, Fuping County, Longquanguan Town, Heiyagou Village (38°16.00'N, 114°5.00'E, 900 m), 5 August 2014, Bao-Shi Zhang leg. **Paratypes:** 2♂, 8♀ (MHBUE), same data as holotype. (not examined)

Material examined: 1♂ (SYNU-Ar00166), 3♀ (SYNU-Ar00167–Ar00169), China, Hebei, Baoding, Fuping County, Longquanguan Town, Heiyagou Village, near Heiyagou Bridge (38°57.41'N, 113°47.63'E, 1125 m), 6 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg. 2♂ (SYNU-Ar00243, Ar00244), 2♀ (SYNU-Ar00245, Ar00246), China, Hebei, Baoding, Fuping County, Datai Town, Laoluqu Village, Chaoyang Street (39°1.28'N, 114°20.15'E, 590 m), 6 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. hunyuan* sp. nov. in having similar male chelicerae and

epigyne (figures 6C, 8D, 10E, 12F in Zhang et al., 2016, Figure S8B) but can be easily distinguished by procursus with small prolateral membranous process (arrow 1 in Figure S8D; membranous process large and curved in *P. hunyuan* sp. nov., arrow 1 in Figure S19C), by uncus with long, strongly curved distal apophysis with hooked tip and with semi-circular proximal apophysis (arrows 1, 2 in Figure S8A; distal apophysis angular, proximal apophysis nearly trapezoidal in *P. hunyuan* sp. nov., arrows 1, 2 in Figure S20C), and by vulval pore plates strongly curved and nearly semilunar (Figure S8C; pore plates long, anteriorly narrow and posteriorly wide in *P. hunyuan* sp. nov., Figure S20B).

Description (amended): Male (SYNU-Ar00166). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with long (longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and distinct ventral protuberance; procursus with curved prolateral membranous process (arrow 1 in Figure S8D), long, curved distal apophysis (arrow 2 in Figure S8D), ventral sclerite (arrow 3 in Figure S8D), and slender dorsal spine.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

Remarks: The female of this species in the original publication (figures 6E, F, 8F, G in Zhang et al., 2016) was apparently mismatched (misidentification). The true one is in figures 10E, F, 12F, G of *Pholcus auricularis* (Zhang et al., 2016). The morphological characters of the female genitalia (e.g., epigynal plate nearly triangular, curved posteriorly, vulval pore plates strongly curved, nearly semilunar) are consistent with those of the specimens from the two localities as listed above (Figure S8B, C). This conclusion is also supported by molecular evidence (Figure S1B: number 16 in the box; W111-male, W112-female and W113-female are shown as a single species). Besides, the new species, *P. hunyuan* sp. nov., is similar to *P. curvus* in male pedipalpal morphology (e.g., procursus with long and curved distal apophysis, prolateral membranous process, and ventral sclerite, uncus with proximal and distal apophyses). Nevertheless, the epigyne and vulva of the former are more similar to Figure S8B, C in this paper (e.g., epigynal plate nearly triangular, anterior arch wavy) rather than figures 6E, F, 8F, G in Zhang et al. (2016). These similar characters also further support our conclusion.

Pholcus datan Tong & Li, 2010

Figure S9

Pholcus datan Tong & Li, 2010: 38, figures 1G–I, 6A–F.

Type material examined: Holotype: ♂ (IZCAS), China, Hebei, Chengde, Fengning County, Datan Town, Fuzhu Cave (41°22.19'N, 116°29.41'E, 869 m), 4 April 2005, Shu-Qiang Li, Kai Meng, Yu-Chi Zheng & Qian Wang leg. **Paratypes:** 28♂, 31♀ (IZCAS), same data as holotype.

Other material examined: 2♂ (SYNU-Ar00170, Ar00171), 2♀ (SYNU-Ar00172, Ar00173), China, Hebei, Chengde, Fengning County, Datan Town, near Fozhudong Scenic Spot, roadside of Banhu Road (41°22.28'N, 116°28.65'E, 886 m), 2 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. babao* Tong & Li, 2010 in having similar male chelicerae and epigyne (figure 6C, E in Tong & Li, 2010) but can be easily distinguished by procursus with

curved, sclerotized prolateral apophysis (arrow 1 in Figure S9C; sclerotized prolateral apophysis pointed in *P. babao*, arrow 1 in Figure S2C), distally bifurcated dorsal apophysis (arrow 2 in Figure S9C; dorsal membranous process in *P. babao*, arrow 3 in Figure S2C), and ventral sclerite (arrow 3 in Figure S9C; absent in *P. babao*, Figure S2C), without prolateral membranous process (Figure S9C; present in *P. babao*, arrow 2 in Figure S2C), by uncus curved distally, with distally hooked proximal apophysis (Figure S9A; uncus angular distally, proximal apophysis with subdistal apophysis in *P. babao*, Figure S2A), and by vulval anterior arch strongly curved (Figure S9B; slightly curved in *P. babao*, Figure S2B).

Description (amended): Male (SYNU-Ar00170). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus with curved, sclerotized prolateral apophysis (arrow 1 in Figure S9C), distally bifurcated dorsal apophysis (arrow 2 in Figure S9C), and ventral sclerite (arrow 3 in Figure S9C). Female (SYNU-Ar00172). Epigyne curved posteriorly. Vulva (Figure S9B) with sclerotized, strongly curved anterior arch, pair of nearly elliptic pore plates, and pair of lateral sclerites.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus datong* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: EA15CDDA-E772-46F4-AE86-22534512DE1F

Figures S10, S11

Holotype: ♂ (SYNU-Ar00174), China, Shanxi, Datong, Lingqiu County, Shangzhai Town, Diaowang Village, roadside of Jinshen Road (39°23.36'N, 114°17.45'E, 854 m), 12 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00175), 2♀ (SYNU-Ar00176, Ar00177), same data as holotype.

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

Diagnosis: The new species resembles *P. wangxidong* Zhang & Zhu, 2009 in having similar male chelicerae (Figure S11D) but can be easily distinguished by procursus with sclerotized distal apophysis (arrow 1 in Figure S10C; absent in *P. wangxidong*, figure 195C in Yao & Li, 2012) and dorsal and ventral membranous processes (arrows 2, 3 in Figure S10C; sclerotized dorsal apophysis with pointed membranous process, sclerotized ventral apophysis in *P. wangxidong*, figure 195C in Yao & Li, 2012), by uncus nearly round (Figure S11C; uncus with several angular apophyses in *P. wangxidong*, figure 195A in Yao & Li, 2012), by epigyne slightly curved postero-medially (Figure S11A; strongly curved posteriorly in *P. wangxidong*, figure 196A in Yao & Li, 2012), and by vulval pore plates nearly semi-circular (Figure S11B; long elliptic in *P. wangxidong*, figure 196B in Yao & Li, 2012). Also see diagnosis for *P. guangling* sp. nov.

Description of holotype: Male (SYNU-Ar00174). Total length 4.57 (4.77 with clypeus), carapace 1.41 long, 1.75 wide, opisthosoma 3.16 long, 1.59 wide. Leg I: 37.43 (9.34, 0.76, 9.43, 15.28, 2.62), leg II: 24.82 (6.94, 0.72, 6.21, 9.39, 1.56), leg III: 16.55 (5.29, 0.69, 4.05, 6.33, 1.04), leg IV: 23.63 (6.84, 0.67, 5.90, 8.90, 1.32); tibia I L/d: 58. Eye interdistances and diameters: PME-PME 0.22, PME 0.16, PME-ALE 0.05, AME-AME 0.08, AME 0.09. Sternum width/length: 1.18/0.96. Habitus as in Figure S11E, F. Carapace yellowish, with brown radiating marks and marginal

brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish; sternum yellowish, with brown marks. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellow, with dorsal and lateral spots. Chelicerae (Figure S11D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S10A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with distinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with sclerotized distal apophysis (arrow 1 in Figure S10C), large dorsal and ventral membranous processes (arrows 2, 3 in Figure S10C), and strong dorsal and ventral spines (5 dorsal, arrow in Figure S10D; 4 ventral, arrow in Figure S10A); uncus with scales (Figure S11C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S11C). Retrolateral trichobothrium of tibia I at 7% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 30 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00176). Similar to male, habitus as in Figure S11G, H. Total length 4.81 (4.96 with clypeus), carapace 1.39 long, 1.76 wide, opisthosoma 3.42 long, 1.57 wide; tibia I: 8.03; tibia I L/d: 53. Eye interdistances and diameters: PME-PME 0.21, PME 0.15, PME-ALE 0.04, AME-AME 0.06, AME 0.09. Sternum width/length: 1.10/0.87. Clypeus brown, with dark brown marks. Epigyne (Figure S11A) slightly curved postero-medially, with median marks and knob. Vulva (Figure S11B) with nearly n-shaped, sclerotized anterior arch and pair of large, nearly semi-circular pore plates.

Variation: Tibia I in paratype male (SYNU-Ar00175): 10.28. Tibia I in another paratype female (SYNU-Ar00177): 7.34.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, type locality; Figure S1A).

***Pholcus exilis* Tong & Li, 2010**

Figure S12

Pholcus exilis Tong & Li, 2010: 44, figures 1J–L, 7A–E.

Type material examined: Holotype: ♂ (IZCAS), China, Hebei, Chengde, Yingshouyingzi Town, Sifang Cave (40°33.19'N, 117°40.15'E, 492 m), 8 April 2005, Xiang Xu, Qian Wang, Yu-Chi Zheng & Yan-Yun Bi leg. **Paratypes:** 26♂, 13♀ (IZCAS), same data as holotype.

Other material examined: 1♂ (SYNU-Ar00178), 1♀ (SYNU-Ar00179), China, Hebei, Chengde, Yingshouyingzi Town, Ruins of Sifangdong Palaeo-human (40°33.23'N, 117°40.16'E, 463 m), 29 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. papillatus* Zhang, Zhang & Liu, 2016 in having similar male chelicerae, uncus, and vulva (Figure S12A, B, figure 7C in Tong & Li, 2010) but can be easily distinguished by procursus with curved prolateral membranous process (arrow 1 in Figure S12C; prolateral membranous process with stick-shaped apophysis in *P. papillatus*, figures 1C, 3C in Zhang et al., 2016), without sclerotized dorsal apophysis (Figure S12C; present in *P. papillatus*, figures 1C, 3C in Zhang et al., 2016), by ‘pseudo-appendix’ stick-shaped, distally hooked (arrow in Figure S12A; without ‘pseudo-appendix’ in *P. papillatus*, figure 2B in Zhang et al., 2016), and

by epigynal knob worm-shaped (figure 7D in Tong & Li, 2010; nearly triangular in *P. papillatus*, figures 2E, 4F in Zhang et al., 2016). Also see diagnosis for *P. papilionis*.

Description (amended): Male (SYNU-Ar00178). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with long (longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and distinct ventral protuberance; tibia with prolatero-ventral projection; procursus with curved prolateral membranous process (arrow 1 in Figure S12C) and two strong and one slender dorsal spines (arrow 2 in Figure S12C); ‘pseudo-appendix’ stick-shaped, distally hooked (arrow in Figure S12A). Female (SYNU-Ar00179). Epigyne curved posteriorly. Vulva (Figure S12B) with curved anterior arch, pair of nearly elliptic pore plates, and pair of narrow lateral sclerites.

Natural history: The species was found on rock walls near the cave entrance.

Distribution: China (Hebei, Figure S1A).

***Pholcus fengning* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: 2D1B10F4-7584-4222-ABBA-BC87091D0CF7

Figures S13, S14

Holotype: ♂ (SYNU-Ar00180), China, Hebei, Chengde, Fengning County, Wudaoying Town, Shiqidaogou, Xingfu Village (41°17.50'N, 116°22.90'E, 992 m), 3 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00181), 2♀ (SYNU-Ar00182, Ar00183), same data as holotype.

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

Diagnosis: The new species resembles *P. papillatus* Zhang, Zhang & Liu, 2016 in having similar male chelicerae and epigyne (Figure S14A, D) but can be easily distinguished by procursus with ventral sclerite (arrow 3 in Figure S13C; absent in *P. papillatus*, figures 1C, 3C in Zhang et al. 2016), by uncus distally protruding (Figure S14C; uncus distally strongly curved and cone-shaped in *P. papillatus*, figure 2B in Zhang et al. 2016), by vulval anterior arch wavy (Figure S14B; arc-shaped in *P. papillatus*, figures 2F, 4G in Zhang et al. 2016), and by pore plates nearly semi-circular (Figure S14B; long elliptic in *P. papillatus*, figures 2F, 4G in Zhang et al. 2016).

Description of holotype: Male (SYNU-Ar00180). Total length 5.82 (5.98 with clypeus), carapace 1.74 long, 2.08 wide, opisthosoma 4.08 long, 2.02 wide. Leg I: 52.86 (12.86, 0.88, 13.74, 22.67, 2.71), leg II: 35.46 (9.44, 0.83, 9.20, 14.33, 1.66), leg III: 19.92 (6.90, 0.78, 4.67, 6.34, 1.23), leg IV: 32.28 (9.06, 0.79, 8.21, 12.63, 1.59); tibia I L/d: 71. Eye interdistances and diameters: PME-PME 0.27, PME 0.16, PME-ALE 0.04, AME-AME 0.06, AME 0.10. Sternum width/length: 1.35/1.16. Habitus as in Figure S14E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brown marks; sternum yellowish, with brown marks. Legs yellowish, but brownish on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S14D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S13A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with sclerotized,

angular disto-dorsal apophysis (arrow 1 in Figure S13C), prolateral membranous process (arrow 2 in Figure S13C), ventral sclerite (arrow 3 in Figure S13C), and five long dorsal spines (arrow in Figure S13D); uncus with scales and angular proximal apophysis (arrow in Figure S14C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S14C). Retrolateral trichobothrium of tibia I at 5% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 29 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00182). Similar to male, habitus as in Figure S14G, H. Total length 5.24 (5.32 with clypeus), carapace 1.56 long, 1.92 wide, opisthosoma 3.68 long, 1.64 wide; tibia I: 8.52; tibia I L/d: 43. Eye interdistances and diameters: PME-PME 0.24, PME 0.14, PME-ALE 0.06, AME-AME 0.05, AME 0.10. Sternum width/length: 1.17/1.01. Clypeus dark brown. Epigyne (Figure S14A) curved posteriorly, with brown marks and knob. Vulva (Figure S14B) with wavy, sclerotized anterior arch, pair of nearly semi-circular pore plates, and two pairs of narrow lateral sclerites.

Variation: Tibia I in paratype male (SYNU-Ar00181): 11.69. Tibia I in another paratype female (SYNU-Ar00183): 8.88.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus guangling* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: 1663418B-05F5-4A3E-8D9D-1DD6167A5D09

Figures S15, S16

Holotype: ♂ (SYNU-Ar00184), China, Shanxi, Datong, Guangling County, Liangzhuang Town, Muchang Village (39°52.43'N, 113°58.36'E, 1750 m), 12 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00185), 2♀ (SYNU-Ar00186, Ar00187), same data as holotype.

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

Diagnosis: The new species resembles *P. datong* sp. nov. in having similar epigyne (Figure S16A) but can be easily distinguished by procurus with large prolateral membranous process with several small processes (arrow in Figure S15C; long prolateral membranous process in *P. datong*, arrow 2 in Figure S10C), without sclerotized distal apophysis and ventral membranous process (Figure S15C; present in *P. datong*, arrows 1, 3 in Figure S10C), by uncus with distal apophysis (arrow in Figure S16C; absent in *P. datong*, Figure S11C), by male cheliceral frontal apophyses widely separated (Figure S16D; close in *P. datong*, Figure S11D), and by vulval pore plates long and narrow (Figure S16B; nearly semi-circular in *P. datong*, Figure S11B).

Description of holotype: Male (SYNU-Ar00184). Total length 5.59 (5.82 with clypeus), carapace 1.32 long, 1.92 wide, opisthosoma 4.27 long, 2.43 wide. Leg I: 40.65 (10.28, 0.87, 10.74, 16.16, 2.60), leg II: 29.06 (7.62, 0.82, 7.65, 11.18, 1.79), leg III: 20.16 (5.92, 0.75, 5.06, 7.21, 1.22), leg IV: 27.05 (7.73, 0.76, 7.03, 10.03, 1.50); tibia I L/d: 56. Eye interdistances and diameters: PME-PME 0.28, PME 0.16, PME-ALE 0.06, AME-AME 0.07, AME 0.10. Sternum width/length: 1.37/1.18. Habitus as in Figure S16E, F. Carapace yellowish, with brown radiating marks; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with dark brown marks; sternum yellowish, with brown marks. Legs yellowish, but whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae.

Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S16D) with pair of proximo-lateral apophyses, pair of distal apophyses with one tooth each, and pair of frontal apophyses. Pedipalp as in Figure S15A, B; trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus slender, simple proximally but complex distally, with large, curved prolateral membranous process with several small processes (arrow in Figure S15C); uncus with scaly edge and distal apophysis (arrow in Figure S16C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S16C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 31 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00186). Similar to male, habitus as in Figure S16G, H. Total length 5.12 (5.33 with clypeus), carapace 1.48 long, 1.73 wide, opisthosoma 3.64 long, 1.62 wide; tibia I: 7.78; tibia I L/d: 48. Eye interdistances and diameters: PME-PME 0.22, PME 0.16, PME-ALE 0.04, AME-AME 0.06, AME 0.09. Sternum width/length: 1.15/0.96. Epigyne (Figure S16A) with knob. Vulva (Figure S16B) with strongly curved anterior arch, pair of long and narrow pore plates, and pair of narrow lateral sclerites.

Variation: Tibia I in paratype male (SYNU-Ar00185): 8.48. Tibia I in another paratype female (SYNU-Ar00187): 8.12.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, type locality; Figure S1A).

***Pholcus huailai* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: 6AD43FA6-A3E9-4AA3-A9D2-39BA8647D222

Figures S17, S18

Holotype: ♂ (SYNU-Ar00188), China, Hebei, Zhangjiakou, Huailai County, Xinbaoan Town, Pandaodi Village, roadside of Y138 (40°29.15'N, 115°26.96'E, 779 m), 4 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 2♀ (SYNU-Ar00189, Ar00190), same data as holotype.

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

Diagnosis: The new species resembles *P. chicheng* Tong & Li, 2010 in having similar male chelicerae and epigyne (Figure S18A, D) but can be easily distinguished by procursus without spine-shaped prolateral apophysis (Figure S17C; present in *P. chicheng*, arrow 2 in Figure S7C), by uncus with angular proximal apophysis (arrow 1 in Figure S18C; long and thick proximal apophysis in *P. chicheng*, arrow 1 in Figure S7A), by ‘pseudo-appendix’ not bifurcated (arrow 2 in Figure S18C; distally bifurcated in *P. chicheng*, arrow 2 in Figure S7A), by vulval anterior arch nearly trapezoidal (Figure S18B; wavy in *P. chicheng*, Figure S7B), and by pore plates oval (Figure S18B; long elliptic in *P. chicheng*, Figure S7B).

Description of holotype: Male (SYNU-Ar00188). Total length 5.56 (5.74 with clypeus), carapace 1.56 long, 2.02 wide, opisthosoma 4.00 long, 1.68 wide. Leg I: 45.33 (11.37, 0.84, 11.74, 18.80, 2.58), leg II: 31.08 (8.65, 0.79, 7.78, 12.24, 1.62), legs III, IV missing; tibia I L/d: 69. Eye interdistances and diameters: PME-PME 0.25, PME 0.14, PME-ALE 0.05, AME-AME 0.07, AME 0.10. Sternum width/length: 1.31/1.14. Habitus as in Figure S18E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and

lateral brown bands; clypeus yellowish, with dark brown marks; sternum brown. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S18D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S17A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with sclerotized, curved prolateral apophysis (arrow 1 in Figure S17C), disto-dorsal sclerite (arrow 2 in Figure S17C), prolateral membranous process (arrow 3 in Figure S17C), ventral sclerite (arrow in Figure S17B), and slender dorsal spine (arrow in Figure 17D); uncus curved distally, with scales and angular proximal apophysis (arrow 1 in Figure S18C); ‘pseudo-appendix’ slender, distally swollen (arrow 2 in Figure S18C); embolus weakly sclerotized, with some transparent distal projections (Figure S18C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 32 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00189). Similar to male, habitus as in Figure S18G, H. Total length 5.34 (5.48 with clypeus), carapace 1.70 long, 1.97 wide, opisthosoma 3.64 long, 1.68 wide; tibia I: 9.28; tibia I L/d: 54. Eye interdistances and diameters: PME-PME 0.22, PME 0.14, PME-ALE 0.05, AME-AME 0.05, AME 0.08. Sternum width/length: 1.25/1.13. Clypeus dark brown. Epigyne (Figure S18A) strongly curved posteriorly, with lateral brown marks and large knob. Vulva (Figure S18B) with nearly trapezoidal, sclerotized anterior arch, pair of oval pore plates, and pair of triangular lateral sclerites.

Variation: Tibia I in another paratype female (SYNU-Ar00190): 8.46.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus hunyuan* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act:455C57CE-A681-4F46-9B67-FB6629AE5105

Figures S19, S20

Holotype: ♂ (SYNU-Ar00191), China, Shanxi, Datong, Hunyuan County, Linchang Town, Xiangyang Village, roadside of G239 (39°34.95'N, 113°47.71'E, 1571 m), 12 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00192), 2♀ (SYNU-Ar00193, Ar00194), same data as holotype.

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

Diagnosis: The new species resembles *P. curvus* Zhang, Zhang & Liu, 2016 in having similar male chelicerae and epigyne (Figure S20A, D) but can be easily distinguished by procursus with large, curved prolateral membranous process (arrow 1 in Figure S19C; membranous process small in *P. curvus*, arrow 1 in Figure S8D), by uncus with angular distal apophysis and nearly trapezoidal proximal apophysis (arrows 1, 2 in Figure S20C; distal apophysis long, strongly curved, with hooked tip, proximal apophysis semi-circular in *P. curvus*, arrows 1, 2 in Figure S8A), and by vulval pore plates long, anteriorly narrow and posteriorly wide (Figure S20B; pore plates strongly curved, nearly semilunar in *P. curvus*, Figure S8C).

Description of holotype: Male (SYNU-Ar00191). Total length 3.88 (4.04 with clypeus), carapace

1.17 long, 1.39 wide, opisthosoma 2.71 long, 1.29 wide. Leg I: 26.74 (6.78, 0.62, 6.84, 10.52, 1.98), leg II: 19.44 (5.45, 0.56, 4.82, 7.33, 1.28), leg III: 14.15 (4.18, 0.51, 3.31, 4.98, 1.17), leg IV: 18.38 (5.41, 0.54, 4.42, 6.71, 1.30); tibia I L/d: 52. Eye interdistances and diameters: PME-PME 0.22, PME 0.12, PME-ALE 0.04, AME-AME 0.05, AME 0.09. Sternum width/length: 0.90/0.82. Habitus as in Figure S20E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brown marks; sternum yellowish, with brown marks. Legs yellowish, but brownish on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S20D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S19A, B; trochanter with long (longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procurus simple proximally but complex distally, with large, curved prolateral membranous process (arrow 1 in Figure S19C), long, sclerotized distal apophysis (arrow 2 in Figure S19C), sclerotized ventral apophysis (arrow 3 in Figure S19C), and slender dorsal spine (arrow in Figure S19D); uncus with scaly edge, angular distal apophysis, and nearly trapezoidal proximal apophysis (arrows 1, 2 in Figure S20C); appendix absent; embolus weakly sclerotized, without some transparent distal projections (Figure S20C). Retrolateral trichobothrium of tibia I at 8% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 26 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00193). Similar to male, habitus as in Figure S20G, H. Total length 3.87 (4.00 with clypeus), carapace 1.20 long, 1.35 wide, opisthosoma 2.67 long, 1.58 wide; tibia I: 6.20; tibia I L/d: 41. Eye interdistances and diameters: PME-PME 0.22, PME 0.13, PME-ALE 0.04, AME-AME 0.05, AME 0.09. Sternum width/length: 0.89/0.80. Clypeus dark brown. Epigyne (Figure S20A) curved posteriorly, with anterior and lateral brown marks and knob. Vulva (Figure S20B) with wavy anterior arch, pair of long, anteriorly narrow and posteriorly wide pore plates, and pair of narrow lateral sclerites.

Variation: Tibia I in paratype male (SYNU-Ar00192): 8.50. Tibia I in another paratype female (SYNU-Ar00194): 6.17.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, type locality; Figure S1A).

***Pholcus jinniu* Tong & Li, 2010**

Figure S21

Pholcus jinniu Tong & Li, 2010: 44, figures 1M–O, 8A–E.

Type material examined: Holotype: ♂ (IZCAS), China, Hebei, Xinglong County, Jinniu Cave (40°30.88'N, 117°30.27'E), 9 April 2005, Xiang Xu, Qian Wang, Yu-Chi Zheng & Yan-Yun Bi leg.

Paratypes: 5♂, 4♀ (IZCAS), same data as holotype.

Other material examined: 2♂ (SYNU-Ar00195, Ar00196), 2♀ (SYNU-Ar00197, Ar00198), China, Hebei, Chengde, Xinglong County, Wulingshan Town, Taojiatai Village, roadside of Wuling Road (40°29.65'N, 117°29.71'E, 635 m), 29 July 2021, Zhi-Yuan Yao, Ying Lu &

Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. brevis* Yao & Li, 2012 in having similar male chelicerae and epigyne (figure 8C, D in Tong & Li, 2010) but can be easily distinguished by procursus with spine-shaped prolateral apophysis (arrow 2 in Figure S21C; spine-shaped ventral apophysis in *P. brevis*, figures 39C, 42A in Yao & Li, 2012), by uncus distally strongly protruding (Figure S21A; uncus ear-shaped in *P. brevis*, figures 39A, 41A in Yao & Li, 2012), and by vulval pore plates long and narrow (Figure S21B; anteriorly wide and posteriorly pointed in *P. brevis*, figures 40B, 42D in Yao & Li, 2012). Also see diagnosis for *P. wuling*.

Description (amended): Male (SYNU-Ar00195). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus with curved prolateral membranous process (arrow 1 in Figure S21C), spine-shaped prolateral apophysis (arrow 2 in Figure S21C), flat dorsal sclerite (arrow 3 in Figure S21C), and two dorsal spines (arrow 4 in Figure S21C); ‘pseudo-appendix’ weakly sclerotized and short (arrow in Figure S21A). Female (SYNU-Ar00197). Epigyne curved postero-medially. Vulva (Figure S21B) with curved, sclerotized anterior arch, pair of long and narrow pore plates, and pair of large lateral sclerites.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus kuaile* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act:1D51DCCD-3C05-48BA-BDDD-882BCDA02583

Figures S22, S23

Holotype: ♂ (SYNU-Ar00199), China, Hebei, Chengde, Luanping County, Kuaile Street, Wudaohe Village (40°52.80'N, 117°5.11'E, 391 m), 31 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 2♀ (SYNU-Ar00200, Ar00201), same data as holotype.

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

Diagnosis: The new species resembles *P. tongyaoi* Wang & Yao, 2020 in having similar male chelicerae, bulbal apophyses, and epigyne (Figure S23A, C, D) but can be easily distinguished by procursus with long, spine-shaped prolateral apophysis (arrow 1 in Figure S22C; prolateral apophysis short in *P. tongyaoi*, arrow 2 in figure 3C in Wang et al., 2020) and angular ventral sclerite (its tip not curved, arrow in Figure S22B; ventral sclerite with curved tip in *P. tongyaoi*, arrow in figure 3B in Wang et al., 2020), by vulval anterior arch nearly u-shaped (Figure S23B; w-shaped in *P. tongyaoi*, figure 4B in Wang et al., 2020), and by pore plates close together (Figure S23B; wide apart in *P. tongyaoi*, figure 4B in Wang et al., 2020).

Description of holotype: Male (SYNU-Ar00199). Total length 4.68 (4.78 with clypeus), carapace 1.40 long, 1.62 wide, opisthosoma 3.28 long, 1.36 wide. Leg I: 37.29 (9.43, 0.65, 9.71, 15.16, 2.34), leg II: 25.82 (7.21, 0.58, 6.53, 10.04, 1.46), leg III: 17.87 (5.12, 0.57, 4.25, 6.84, 1.09), leg IV: 23.62 (6.71, 0.59, 5.89, 9.03, 1.40); tibia I L/d: 69. Eye interdistances and diameters: PME-PME 0.20, PME 0.14, PME-ALE 0.04, AME-AME 0.05, AME 0.09. Sternum width/length: 1.04/0.88. Habitus as in Figure S23E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus

yellowish, with brown marks; sternum yellowish, with brown marks. Legs brown, but dark brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S23D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S22A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procurus simple proximally but complex distally, with spine-shaped prolateral apophysis (arrow 1 in Figure S22C), curved prolateral membranous lamella (arrow 2 in Figure S22C), distal membranous process (arrow 3 in Figure S22C), angular ventral sclerite (arrow in Figure S22B), and dorsal spine (arrow in Figure S22D); uncus with scaly edge (Figure S23C); ‘pseudo-appendix’ short and curved (arrow in Figure S23C); embolus weakly sclerotized, with some transparent distal projections (Figure S23C). Retrolateral trichobothrium of tibia I at 5% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 23 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00200). Similar to male, habitus as in Figure S23G, H. Total length 5.04 (5.20 with clypeus), carapace 1.44 long, 1.76 wide, opisthosoma 3.60 long, 1.72 wide; tibia I: 8.24; tibia I L/d: 50. Eye interdistances and diameters: PME-PME 0.19, PME 0.15, PME-ALE 0.05, AME-AME 0.05, AME 0.10. Sternum width/length: 1.06/0.89. Clypeus dark brown. Legs yellowish. Epigyne (Figure S23A) curved posteriorly, with knob. Vulva (Figure S23B) with sclerotized, nearly u-shaped anterior arch, pair of elliptic pore plates, and pair of median sclerites closely attached to each other.

Variation: Leg I missing in another female paratype (SYNU-Ar00201).

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus lexuancanhi* Yao, Pham & Li, 2012**

Pholcus lexuancanhi Yao, Pham & Li, 2012: 313, figures 1–15. Wang, Shaheen, He & Yao, 2020: 9, figures 5A–D, 6A–H.

Type material examined: Holotype: ♂ (IZCAS), China, Beijing, Haidian District, Beijing Botanical Garden (40°00.00'N, 116°12.00'E), date and collector unknown.

Other material examined: 2♂ (IZCAS-Ar40901, Ar40902), 2♀ (IZCAS-Ar40903, Ar40904), China, Beijing, Haidian District, Beijing Botanical Garden (40°00.00'N, 116°12.00'E), 30 July 2017, Zhi-Yuan Yao leg.

Diagnosis: The species resembles *P. tongyaoi* Wang & Yao, 2020 in having similar bulbal apophyses and epigyne (figure 6A, C in Wang et al., 2020) but can be distinguished by procurus with large, semicircular, prolateral membranous lamella (arrow 1 in figure 5C in Wang et al., 2020; ventral membranous process in *P. tongyaoi*, arrow 3 in figure 3C in Wang et al., 2020), large, dorsal membranous lamella with sawtooth (arrow 2 in figure 5C in Wang et al., 2020; small, prolateral membranous lamella in *P. tongyaoi*, arrow 1 in figure 3C in Wang et al., 2020), and large, angular ventral sclerite and its tip not curved (arrow in figure 5B in Wang et al., 2020; small, ventral sclerite with curved tip in *P. tongyaoi*, arrow in figure 3B in Wang et al., 2020), by male

chelicerae without frontal apophyses (figure 6D in Wang et al., 2020; present in *P. tongyaoi*, figure 4D in Wang et al., 2020), and by vulva with slightly curved, sclerotized anterior arch with median sclerite (arrow in figure 6B in Wang et al., 2020; n-shaped anterior arch without median sclerite in *P. tongyaoi*, figure 4B in Wang et al., 2020) and oval pore plates (figure 6B in Wang et al., 2020; elliptic in *P. tongyaoi*, figure 4B in Wang et al., 2020).

Description: See Wang et al. (2020).

Distribution: China (Beijing, Figure S1A).

***Pholcus luanping* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: 1EC5BD9B-35F4-4B12-AF75-3CFF54109DD0

Figures S24, S25

Holotype: ♂ (SYNU-Ar00202), China, Hebei, Chengde, Luanping County, Changshanyu Town, junction of Jingshen Road, Luanyang Road and Daguang Highway (40°49.70'N, 117°22.63'E, 617 m), 30 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00203), 2♀ (SYNU-Ar00204, Ar00205), same data as holotype.

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

Diagnosis: The new species resembles *P. babao* Tong & Li, 2010 in having similar male chelicerae and epigyne (Figure S25A, D) but can be easily distinguished by procurus without sclerotized prolateral apophysis (Figure S24C; present in *P. babao*, arrow 1 in Figure S2C), with ventral sclerite (arrow 4 in Figure S24C; absent in *P. babao*, Figure S2C), by uncus with pointed distal apophysis (Figure S25C; with median apophysis in *P. babao*, Figure S2A), and by vulval pore plates long elliptic (Figure S25B; oval in *P. babao*, Figure S2B). Also see diagnosis for *P. xinglong* sp. nov.

Description of holotype: Male (SYNU-Ar00202). Total length 4.67 (4.77 with clypeus), carapace 1.32 long, 1.60 wide, opisthosoma 3.35 long, 1.50 wide. Leg I: missing, leg II: 23.22 (6.40, 0.61, 5.93, 9.53, 0.75), leg III: 16.97 (4.96, 0.57, 4.15, 6.31, 0.98), leg IV: 22.05 (6.37, 0.57, 5.70, 8.06, 1.35). Eye interdistances and diameters: PME-PME 0.27, PME 0.13, PME-ALE 0.06, AME-AME 0.06, AME 0.10. Sternum width/length: 1.06/0.79. Habitus as in Figure S25E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus brown; sternum yellowish, with brown marks. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S25D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S24A, B; trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procurus simple proximally but complex distally, with curved prolateral membranous lamella (arrow 1 in Figure S24C) with prolateral membranous process and lamella (arrows 2, 3 in Figure S24C), angular ventral sclerite (arrow 4 in Figure S24C), and dorsal spine (arrow in Figure S24D); uncus curved, with scales, distally pointed (Figure S25C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S25C). Legs with short vertical setae on tibiae, metatarsi, and tarsi.

Description of paratype: Female (SYNU-Ar00204). Similar to male, habitus as in Figure S25G,

H. Total length 4.92 (5.11 with clypeus), carapace 1.44 long, 1.73 wide, opisthosoma 3.48 long, 1.77 wide; tibia I: 7.87; tibia I L/d: 52. Eye interdistances and diameters: PME-PME 0.22, PME 0.14, PME-ALE 0.05, AME-AME 0.06, AME 0.09. Sternum width/length: 1.07/0.83. Clypeus dark brown. Epigyne (Figure S25A) curved posteriorly, with median brown marks, pair of lateral protrusions (arrow in Figure S25A), and knob. Vulva (Figure S25B) with sclerotized anterior arch, pair of long elliptic pore plates, and pair of lateral sclerites.

Variation: Leg I missing in male paratype (SYNU-Ar00203). Tibia I in another paratype female (SYNU-Ar00205): 7.03.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus luya* Peng & Zhang, 2013**

Figure S26

Pholcus luya Peng & Zhang, 2013: 77, figures 3A–G, 4A–F.

Holotype: ♂ (MHBU), China, Shanxi, Ningwu County, Luyashan Mountain (39°00.00'N, 112°17.00'E), 5 July 2011, Zhi-Zhong Gao leg. **Paratypes:** 3♂, 11♀ (MHBU), same data as holotype. (not examined)

Material examined: 1♂ (SYNU-Ar00206), 2♀ (SYNU-Ar00207, Ar00208), China, Shanxi, Xinzhou, Ningwu County, Dongzhai Town, near Luyashan Scenic Spot (38°49.61'N, 112°5.51'E, 1596 m), 11 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. clavimaculatus* Zhu & Song, 1999 in having similar male chelicerae and vulva (figures 3C, E, 4A, F in Peng & Zhang, 2013, Figure S26B) but can be distinguished by procursus with pointed dorsal apophysis (arrow 2 in Figure S26C; pointed prolateral apophysis in *P. clavimaculatus*, figure 47D in Yao & Li, 2012), by uncus S-shaped, without scales (Figure S26A; ear-shaped, with scaly edge in *P. clavimaculatus*, figure 47B in Yao & Li, 2012), and by epigynal plate nearly trapezoidal in ventral view (figures 3D, 4E in Peng & Zhang, 2013; nearly elliptic in *P. clavimaculatus*, figure 48A in Yao & Li, 2012).

Description (amended): Male (SYNU-Ar00206). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and distinct ventral protuberance; procursus with curved prolateral membranous process (arrow 1 in Figure S26C), sclerotized dorsal apophysis (arrow 2 in Figure S26C), sclerotized ventral apophysis (arrow 3 in Figure S26C), and slender dorsal spine (arrow 4 in Figure S26C). Female (SYNU-Ar00207). Epigyne curved posteriorly.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, Figure S1A).

***Pholcus papilionis* Peng & Zhang, 2011**

Figure S27

Pholcus papilionis Peng & Zhang, 2011: 80, figure 1a–g.

Holotype: ♂ (MHBU), China, Shanxi, Yu County, Zhulongshan Mountain (38°1.00'N,

113°37.00'E), 22 July 2010, Sheng-Tao Guo leg. **Paratypes:** 2♂, 10♀ (MHBU), same data as holotype. (not examined)

Material examined: 2♂ (SYNU-Ar00209, Ar00210), 2♀ (SYNU-Ar00211, Ar00212), China, Shanxi, Yangquan, Yu County, Zhulongshan Mountain, Zhulong Temple (38°7.23'N, 113°17.50'E, 1229 m), 10 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. exilis* Tong & Li, 2010 in having similar male chelicerae, epigyne, and vulva (figure 1b, d in Peng & Zhang, 2011, Figure S27B) but can be easily distinguished by procursus with sclerotized dorsal and ventral apophyses (arrows 2, 3 in Figure S27C; absent in *P. exilis*, Figure S12C), by uncus with blunt distal apophysis (Figure S27A; pointed distal apophysis in *P. exilis*, Figure S12A), by 'pseudo-appendix' curved (arrow in Figure S27A; straight and distally hooked in *P. exilis*, arrow in Figure S12A).

Description (amended): Male (SYNU-Ar00209). Cheliceral distal apophyses with one tooth each. Pedipalpal trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus with curved prolateral membranous process (arrow 1 in Figure S27C), sclerotized dorsal apophysis (arrow 2 in Figure S27C), and sclerotized ventral apophysis (arrow 3 in Figure S27C); 'pseudo-appendix' long and curved (arrow in Figure S27A). Female (SYNU-Ar00211). Epigyne curved posteriorly.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, Figure S1A).

***Pholcus papillatus* Zhang, Zhang & Liu, 2016**

Pholcus papillatus Zhang, Zhang & Liu, 2016: 56, figures 1A–D, 2A–F, 3A–D, 4A–G.

Holotype: ♂ (MHBU), China, Hebei, Baoding, Fuping County, Longquanguan Town, Liaodaobei Village (38°16.00'N, 114°17.00'E, 1700 m), 6 August 2014, Bao-Shi Zhang leg. **Paratypes:** 1♂, 3♀ (MHBU), same data as holotype. (not examined)

Diagnosis: The species resembles *P. exilis* Tong & Li, 2010 in having similar male chelicerae, uncus, and vulva (figures 2B, C, F, 4D, G in Zhang et al., 2016) but can be easily distinguished by procursus with prolateral membranous process with stick-shaped apophysis (figures 1C, 3C in Zhang et al., 2016; prolateral membranous process curved in *P. exilis*, arrow 1 in Figure S12C) and with sclerotized dorsal apophysis (figures 1C, 3C in Zhang et al., 2016; absent in *P. exilis*, Figure S12C), by bulb without 'pseudo-appendix' (figure 2B in Zhang et al., 2016; 'pseudo-appendix' stick-shaped, distally hooked in *P. exilis*, arrow in Figure S12A), and by epigynal knob nearly triangular (figures 2E, 4F in Zhang et al., 2016; worm-shaped in *P. exilis*, figure 7D in Tong & Li, 2010). Also see diagnosis for *P. fengning* sp. nov.

Description: See Zhang et al. (2016).

Distribution: China (Hebei, Figure S1A).

***Pholcus pennatus* Zhang, Zhu & Song, 2005**

Pholcus pennatus Zhang, Zhu & Song, 2005: 65, figures 1–8. Zhang & Zhu, 2009a: 65, figure 35A–H. Huber, 2011: 463, figures 2152–2154, 2165–2166, 2224–2228. Yao & Li, 2012: 30,

figures 142A–D, 143A–C.

Type material examined.: Paratypes: 1♂, 1♀ (MHBU), China, Hebei, Zhanhuang County, Zhangshiyan Scenic Area (37°36.00'N, 114°18.00'E, 800–1000 m), 13 June 1998, Ming-Sheng Zhu & Feng Zhang leg.

Other material examined: 1♂ (SYNU-Ar00213), 2♀ (SYNU-Ar00214, Ar00215), China, Hebei, Shijiazhuang, Jingxing County, Cangyanshan Town, near Cangyanshan Scenic Spot (37°50.05'N, 114°8.21'E, 455 m), 8 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. changchi* sp. nov. in having similar male chelicerae, bulbal apophyses, and epigyne (figures 142A, 143A in Yao & Li, 2012) but can be easily distinguished by procursus with slender prolateral apophysis (figure 142C, D in Yao & Li, 2012; prolateral apophysis wide in *P. changchi* sp. nov., arrow 3 in Figure S3C, arrow 2 in Figure S3D) and strongly curved prolateral membranous lamella (figure 142C in Yao & Li, 2012; prolateral membranous lamella flat in *P. changchi* sp. nov., arrow 2 in Figure S3C), by vulval anterior arch large and nearly triangular laterally (figure 143B in Yao & Li, 2012; narrow laterally in *P. changchi* sp. nov., Figure S4B), and by pore plates nearly round (figure 143B in Yao & Li, 2012; nearly elliptic, pointed anteriorly and blunt posteriorly in *P. changchi* sp. nov., Figure S4B).

Description: See Zhang & Zhu (2009a) and Huber (2011).

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus suizhongicus* Zhu & Song, 1999**

Pholcus suizhongicus Zhu & Song, in Song, Zhu & Chen, 1999: 59, figure 25A–H. Zhang & Zhu, 2009a: 89, figure 51A–H. Yao & Li, 2012: 33, figures 167A–D, 168A–C.

Type material examined: Holotype: ♂ (MHBU), China, Liaoning, Suizhong County, 4 August 1987, Shu-Sen Gao leg. **Paratype:** 1♀ (MHBU), same data as holotype.

Diagnosis: The species can be easily distinguished from all known congeners by procursus with nearly triangular prolateral membranous process, angular dorsal apophysis, and ventral sclerite (figure 167B, C in Yao & Li, 2012); by ‘pseudo-appendix’ long and distally swollen (figure 167A, B in Yao & Li, 2012), and by vulval pore plates close together (figure 168B in Yao & Li, 2012).

Description (amended): Male. Pedipalpal trochanter apophysis retrolaterally strongly bulged; femur with distinct ventral protuberance; tibia with prolatero-ventral projection; procursus with nearly triangular prolateral membranous process, angular dorsal apophysis, and ventral sclerite; ‘pseudo-appendix’ long and distally swollen. Female. Epigyne slightly curved posteriorly. Vulva with pair of semi-circular pore plates closely attached to each other.

Distribution: China (Liaoning, Figure S1A).

***Pholcus tang* Yao, Li & Lu, sp. nov.**

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Figures S28, S29

Holotype: ♂ (SYNU-Ar00216), China, Hebei, Baoding, Tang County, Xinghua Street, Shibei

Village, roadside of S241 (39°5.66'N, 114°43.58'E, 400 m), 5 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00217), 2♀ (SYNU-Ar00218, Ar00219), same data as holotype.

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

Diagnosis: The new species resembles *P. beijingensis* Zhu & Song, 1999 in having similar male chelicerae, bulbal apophyses, and vulva (Figure S29B–D) but can be easily distinguished by procursus with large, strongly curved prolateral sclerite (arrow 1 in Figure S28C; prolateral sclerite small and slightly curved in *P. beijingensis*, figure 29C in Yao & Li, 2012) and distal apophysis (arrow 3 in Figure S28C; absent in *P. beijingensis*, figure 29C in Yao & Li, 2012) and by epigyne with pair of lateral protrusions (arrow in Figure S29A; absent in *P. beijingensis*, figure 30A in Yao & Li, 2012).

Description of holotype: Male (SYNU-Ar00216). Total length 5.50 (5.70 with clypeus), carapace 1.50 long, 1.95 wide, opisthosoma 4.00 long, 1.31 wide. Leg I: 42.37 (10.75, 0.78, 10.79, 17.60, 2.45), femur II: 8.03 (other segments missing), leg III: 21.28 (6.09, 0.64, 5.34, 8.06, 1.15), leg IV: 27.66 (8.18, 0.68, 7.21, 10.75, 0.84); tibia I L/d: 67. Eye interdistances and diameters: PME-PME 0.25, PME 0.12, PME-ALE 0.07, AME-AME 0.04, AME 0.12. Sternum width/length: 1.18/1.04. Habitus as in Figure S29E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brown marks; sternum yellowish, with brown marks. Legs brown, but dark brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S29D) with pair of proximo-lateral apophyses and pair of distal apophyses with two teeth each. Pedipalp as in Figure S28A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and distinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with large, curved prolateral sclerite (arrow 1 in Figure S28C), sclerotized dorsal apophysis with membranous lamella (arrow 2 in Figure S28C), distal apophysis (arrow 3 in Figure S28C), and ventral membranous process (arrow in Figure S28B); uncus with scales and distal apophysis (arrow 1 in Figure S29C); ‘pseudo-appendix’ short (arrow 2 in Figure S29C); embolus weakly sclerotized, with some transparent distal projections (Figure S29C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 29 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00218). Similar to male, habitus as in Figure S29G, H. Total length 5.31 (5.42 with clypeus), carapace 1.55 long, 1.90 wide, opisthosoma 3.76 long, 1.92 wide; tibia I: 8.56; tibia I L/d: 53. Eye interdistances and diameters: PME-PME 0.23, PME 0.15, PME-ALE 0.05, AME-AME 0.04, AME 0.10. Sternum width/length: 1.11/0.96. Clypeus dark brown. Legs yellowish. Epigyne (Figure S29A) curved posteriorly, with anterior and lateral brown marks, pair of lateral protrusions (arrow in Figure S29A), and knob. Vulva (Figure S29B) with curved anterior arch and pair of elliptic pore plates.

Variation: Leg I missing in male paratype (SYNU-Ar00217). Tibia I in another paratype female (SYNU-Ar00219): 7.71.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus triangulatus* Zhang & Zhang, 2000**

Pholcus triangulatus Zhang & Zhang, 2000: 153, figure 3A–H. Zhang & Zhu, 2009a: 93, figure 54A–G. Zhang & Zhu, 2009b: 84, figures 6–8, 11–12. Huber, 2011: 466, figures 2156, 2167–2168, 2233–2237. Yao & Li, 2012: 35, figures 177A–D, 178A–C.

Type material examined.: Paratypes: 1♂, 1♀ (MHBU), China, Hebei, Laiyuan County, Baishishan Mountain (1000–1200 m), 19 July 1999, Feng Zhang & Jun-Xia Zhang leg.

Other material examined: 1♂ (SYNU-Ar00220), 1♀ (SYNU-Ar00221), China, Hebei, Baoding, Laiyuan Town, near Baishishan Scenic Spot, roadside of Xiayin Road (39°13.46'N, 114°44.28'E, 1093 m), 6 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species can be easily distinguished from all known congeners by procursus subdisto-dorsally strongly protruding, with several pointed distal apophyses and angular ventro-submedian apophysis (figure 177B–D in Yao & Li, 2012) and by vulval anterior arch strongly sclerotized and curved (lateral sclerites wide and anterior narrow, figure 178B in Yao & Li, 2012).

Description: See Zhang & Zhu (2009a) and Huber (2011).

Natural history: The species was found on rock walls.

Distribution: China (Beijing, Figure S1A).

***Pholcus tongyaoi* Wang & Yao, 2020**

Pholcus tongyaoi Wang & Yao, in Wang, Shaheen, He & Yao, 2020: 5, figures 2A–D, 3A–D, 4A–H.

Type material examined: Holotype: ♂ (SYNU-Ar00016), China, Beijing, Huairou District, Pool and Valley Natural Park (40°32.60'N, 116°40.68'E, 574 m), 26 April 2019, Tong-Yao Jiang leg.

Paratypes: 2♂ (SYNU-Ar00017, Ar00018), same data as holotype; 2♀ (SYNU-Ar00019, Ar00020), same data as holotype but 23 April 2019.

Diagnosis: The species resembles *P. lexuancanhi* Yao, Pham & Li, 2012 in having similar bulbal apophyses and epigyne (figure 4A, C in Wang et al., 2020) but can be easily distinguished by procursus with large, semicircular, ventral membranous process (arrow in figure 3A in Wang et al., 2020; prolateral membranous lamella in *P. lexuancanhi*, arrow 1 in figure 5C in Wang et al., 2020), small, prolateral membranous lamella with sawtooth (arrow 1 in figure 3C in Wang et al., 2020; large, dorsal membranous lamella in *P. lexuancanhi*, arrow 2 in figure 5C in Wang et al., 2020), and small, angular ventral sclerite with curved tip (arrow in figure 3B in Wang et al., 2020; large ventral sclerite and its tip not curved in *P. lexuancanhi*, arrow in figure 5B in Wang et al., 2020), by male chelicerae with pair of frontal apophyses (figure 4D in Wang et al., 2020; absent in *P. lexuancanhi*, figure 6D in Wang et al., 2020), and by vulva with n-shaped anterior arch without median sclerite (figure 4B in Wang et al., 2020; slightly curved anterior arch with median sclerite in *P. lexuancanhi*, arrow in figure 6B in Wang et al., 2020) and elliptic pore plates (figure 4B in Wang et al., 2020; oval in *P. lexuancanhi*, figure 6B in Wang et al., 2020). Also see diagnosis for *P. kuaile* sp. nov.

Description: See Wang et al. (2020).

Distribution: China (Beijing, Figure S1A).

***Pholcus wangxidong* Zhang & Zhu, 2009**

Pholcus wangxidong Zhang & Zhu, 2009b: 84, figures 1–5, 9–10. Yao & Li, 2012: 38, figures 195A–D, 196A–C.

Type material examined: Holotype: ♂ (only left pedipalpus examined; MHBUS), China, Hebei, Xiaowutaishan Mountain, Wangxidong Cave, Wangxidong Forest Farm (39°36.00'N, 114°48.00'E), 2 May 2009, Feng Zhang & Y.-L. Yan leg. **Paratypes:** 1♂, 1♀ (female opisthosoma broken; MHBUS), same data as holotype.

Other material examined: 2♂ (SYNU-Ar00222, Ar00223), 2♀ (SYNU-Ar00224, Ar00225), China, Hebei, Zhangjiakou, Yu County, Wangxidong Village, Wangxidong Cave (39°37.40'N, 114°46.88'E, 1469 m), 5 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. datong* sp. nov. in having similar male chelicerae (figure 3 in Zhang & Zhu, 2009b) but can be easily distinguished by procursus without sclerotized distal apophysis (figure 195C in Yao & Li, 2012; present in *P. datong* sp. nov., arrow 1 in Figure S10C) and with sclerotized dorsal and ventral apophyses (figure 195C in Yao & Li, 2012; dorsal and ventral membranous processes in *P. datong* sp. nov., arrows 2, 3 in Figure S10C), by uncus with several angular apophyses (figure 195A in Yao & Li, 2012; uncus nearly round in *P. datong* sp. nov., Figure S11C), by epigyne strongly curved posteriorly (figure 196A in Yao & Li, 2012; slightly curved postero-medially in *P. datong* sp. nov., Figure S11A), and by vulval pore plates long elliptic (figure 196B in Yao & Li, 2012; nearly semi-circular in *P. datong* sp. nov., Figure S11B).

Description (amended): Male (SYNU-Ar00222). Pedipalpal trochanter with long (longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; procursus with curved prolateral membranous process, sclerotized dorsal apophysis with pointed membranous process, and sclerotized, angular ventral apophysis. Female (SYNU-Ar00224). Epigyne curved posteriorly.

Natural history: The species was found on rock walls near the cave entrance.

Distribution: China (Hebei, Figure S1A).

***Pholcus wuling* Tong & Li, 2010**

Figure S30

Pholcus wuling Tong & Li, 2010: 51, figures 1S–U, 14A–F.

Type material examined: Holotype: ♂ (IZCAS), China, Hebei, Xinglong County, Wulingshan Mountain (40°35.46'N, 117°21.35'E), 1 August 2005, Zhong-Kui Li leg. **Paratypes:** 5♀ (IZCAS), same data as holotype.

Other material examined: 1♂ (SYNU-Ar00226), 2♀ (SYNU-Ar00227, Ar00228), China, Hebei, Chengde, Xinglong County, Wulingshan Town, near Wulingshan Scenic Spot (40°32.85'N, 117°29.68'E, 887 m), 29 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Diagnosis: The species resembles *P. jinniu* Tong & Li, 2010 in having similar male chelicerae and

epigyne (figure 14C, E in Tong & Li, 2010) but can be easily distinguished by procurus with large, curved prolateral membranous process (arrow 2 in Figure S30C; prolateral membranous process small in *P. jinniu*, arrow 1 in Figure S21C), by uncus with proximal apophysis (arrow 1 in Figure S30A; absent in *P. jinniu*, Figure S21A), by ‘pseudo-appendix’ sclerotized, curved, and pointed (arrow 2 in Figure S30A; weakly sclerotized, straight, and blunt in *P. jinniu*, arrow in Figure S21A), and by vulval pore plates elliptic (Figure S30B; long and narrow in *P. jinniu*, Figure S21B).

Description (amended): Male (SYNU-Ar00226). Cheliceral distal apophyses with two teeth each. Pedipalpal femur with distinct ventral protuberance; tibia with prolatero-ventral projection; procurus with spine-shaped prolateral apophysis (arrow 1 in Figure S30C), curved prolateral membranous process (arrow 2 in Figure S30C), and sclerotized dorsal apophysis (arrow 3 in Figure S30C); uncus with scales and pointed proximal apophysis (arrow 1 in Figure S30A); ‘pseudo-appendix’ pointed and curved (arrow 2 in Figure S30A). Female (SYNU-Ar00227). Epigyne curved postero-medially. Vulva (Figure S30B) with nearly w-shaped anterior arch, pair of nearly elliptic pore plates, and pair of lateral sclerites.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

***Pholcus xinglong* Yao, Li & Lu, sp. nov.**

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Figures S31, S32

Holotype: ♂ (SYNU-Ar00229), China, Hebei, Chengde, Xinglong County, Dashuiquan Town, Mizidi Village, near Xinglongshan Scenic Spot (40°28.89'N, 117°49.98'E, 463 m), 29 July 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00230), 1♀ (SYNU-Ar00231), same data as holotype.

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

Diagnosis: The new species resembles *P. luanping* sp. nov. in having similar male chelicerae and vulva (Figure S32B, D) but can be easily distinguished by procurus with sclerotized dorsal apophysis (arrow 2 in Figure S31C; absent in *P. luanping* sp. nov., Figure S24C), by uncus with curved distal apophysis and pointed proximal apophysis (arrows 1, 2 in Figure S32C; distal apophysis pointed, without proximal apophysis in *P. luanping* sp. nov., Figure S25C), and by epigynal plate anteriorly strongly protruding, without posterior protrusions (Figure S32A; anteriorly slightly protruding, with pair of postero-lateral protrusions in *P. luanping* sp. nov., Figure S25A).

Description of holotype: Male (SYNU-Ar00229). Total length 4.11 (4.23 with clypeus), carapace 1.21 long, 1.49 wide, opisthosoma 2.90 long, 1.17 wide. Leg I: 31.84 (8.31, 0.65, 8.04, 12.56, 2.28), leg II: 22.27 (6.43, 0.59, 5.54, 8.31, 1.40), leg III: 15.89 (4.78, 0.53, 3.81, 5.81, 0.96), leg IV: 20.96 (6.29, 0.56, 5.29, 7.71, 1.11); tibia I L/d: 67. Eye interdistances and diameters: PME-PME 0.24, PME 0.11, PME-ALE 0.05, AME-AME 0.04, AME 0.09. Sternum width/length: 1.02/0.87. Habitus as in Figure S32E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brownish marks; sternum yellowish, with brownish marks. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and

proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S32D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S31A, B; trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with retrolatero-proximal apophysis and distinct ventral protuberance; tibia with prolatero-ventral projection; procurus simple proximally but complex distally, with large, curved prolateral membranous lamella (arrow 1 in Figure S31C), sclerotized dorsal apophysis (arrow 2 in Figure S31C), angular ventral apophysis (arrow 3 in Figure S31C), and two strong and one slender dorsal spines (arrow 4 in Figure S31C); uncus with scales, curved distal apophyses, and pointed proximal apophysis (arrows 1, 2 in Figure S32C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S32C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 30 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00231). Similar to male, habitus as in Figure S32G, H. Total length 4.59 (4.70 with clypeus), carapace 1.23 long, 1.50 wide, opisthosoma 3.36 long, 1.91 wide; tibia I: 7.35; tibia I L/d: 49. Eye interdistances and diameters: PME-PME 0.20, PME 0.14, PME-ALE 0.05, AME-AME 0.04, AME 0.08. Sternum width/length: 1.03/0.90. Clypeus dark brown. Epigyne (Figure S32A) curved postero-medially, with median brown marks and knob. Vulva (Figure S32B) with wavy, sclerotized anterior arch, pair of nearly elliptic pore plates, and pair of lateral sclerites.

Variation: Tibia I in paratype male (SYNU-Ar00230): 9.50.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, type locality; Figure S1A).

***Pholcus xinzhou* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: F216430D-81FA-465D-9BCA-A0830C0BA895

Figures S33, S34

Holotype: ♂ (SYNU-Ar00232), China, Shanxi, Xinzhou, Dai County, Xingao Town, roadside of Gaosu Road (38°59.80'N, 112°58.45'E, 898 m), 11 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 1♂ (SYNU-Ar00233), 2♀ (SYNU-Ar00234, Ar00235), same data as holotype.

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

Diagnosis: The new species can be easily distinguished from all known congeners by procurus with large, curved, sclerotized dorsal apophysis (arrow 2 in Figure S33C), by uncus with blunt distal apophysis (arrow in Figure S34C), and by vulval pore plates large and nearly triangular (Figure S34B).

Description of holotype: Male (SYNU-Ar00232). Total length 5.69 (5.84 with clypeus), carapace 1.62 long, 2.02 wide, opisthosoma 4.07 long, 1.68 wide. Leg I: 41.23 (11.78, 0.83, 11.42, 14.80, 2.40), leg II: – (8.48, 0.81, 7.98, –, –), leg III: 22.44 (6.43, 0.76, 5.53, 8.50, 1.22), leg IV: missing; tibia I L/d: 71. Eye interdistances and diameters: PME-PME 0.29, PME 0.15, PME-ALE 0.05, AME-AME 0.06, AME 0.11. Sternum width/length: 1.30/1.15. Habitus as in Figure S34E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus yellowish, with brown marks; sternum yellowish, with brown marks. Legs yellowish, but brown on patellae and whitish on distal parts of femora

and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S34D) with pair of proximo-lateral apophyses, pair of distal apophyses with one tooth each, and pair of frontal apophyses. Pedipalp as in Figure S33A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with curved prolateral membranous lamella (arrow 1 in Figure S33C), curved, sclerotized dorsal apophysis (arrow 2 in Figure S33C), and two slender dorsal spines (arrow in Figure S33D); uncus with scaly edge and distal apophysis (arrow in Figure S34C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S34C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 27 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00234). Similar to male, habitus as in Figure S34G, H. Total length 5.19 (5.29 with clypeus), carapace 1.47 long, 1.80 wide, opisthosoma 3.72 long, 1.78 wide; tibia I: 8.07; tibia I L/d: 53. Eye interdistances and diameters: PME-PME 0.24, PME 0.14, PME-ALE 0.05, AME-AME 0.04, AME 0.09. Sternum width/length: 1.04/0.94. Clypeus dark brown. Epigyne (Figure S34A) with median and lateral brown marks and knob. Vulva (Figure S34B) with nearly w-shaped, sclerotized anterior arch, pair of large, nearly triangular pore plates, and pair of narrow lateral sclerites.

Variation: Tibia I in paratype male (SYNU-Ar00233): 9.84. Tibia I in another paratype female (SYNU-Ar00235): 8.60.

Natural history: The species was found on rock walls.

Distribution: China (Shanxi, type locality; Figure S1A).

***Pholcus yanqing* Yao, Li & Lu, sp. nov.**

urn:lsid:zoobank.org:act: 87FD0446-CAB8-4907-AF4D-B31B0342152C

Figures S35, S36

Holotype: ♂ (SYNU-Ar00236), China, Beijing, Yanqing District, Liubinpu Town, Chahugou Bridge, roadside of Liugan Road (40°35.58'N, 116°14.11'E, 738 m), 13 August 2021, Zhi-Yuan Yao, Ying Lu & Fang-Yu Zhao leg.

Paratypes: 2♀ (SYNU-Ar00237, Ar00238), same data as holotype.

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

Diagnosis: The new species can be easily distinguished from all known congeners by procursus with sclerotized, angular prolateral apophysis (arrow 1 in Figure S35C), angular prolateral membranous process (arrow 2 in Figure S35C), curved prolateral apophysis (arrow 3 in Figure S35C), and curved dorsal membranous process (arrow 4 in Figure S35C), by uncus distally wide and blunt (Figure S36C), by epigyne posteriorly strongly curved (Figure S36A), and by vulval pore plates long elliptic (Figure S36B).

Description of holotype: Male (SYNU-Ar00236). Total length 5.38 (5.56 with clypeus), carapace 1.50 long, 1.89 wide, opisthosoma 3.88 long, 1.72 wide. Leg I: 44.32 (11.32, 0.78, 11.52, 18.20, 2.50), leg II: 29.87 (8.44, 0.75, 7.31, 11.80, 1.57), leg III missing, leg IV: 20.10 (8.35, 0.68, 7.15, 10.60, 1.42); tibia I L/d: 72. Eye interdistances and diameters: PME-PME 0.24, PME 0.15, PME-ALE 0.05, AME-AME 0.05, AME 0.10. Sternum width/length: 1.26/1.02. Habitus as in

Figure S36E, F. Carapace yellowish, with brown radiating marks and marginal brown bands; ocular area yellowish, with median and lateral brown bands; clypeus dark brown; sternum brown. Legs yellowish, but brown on patellae and whitish on distal parts of femora and tibiae, with darker rings on subdistal parts of femora and proximal and subdistal parts of tibiae. Opisthosoma yellowish, with dorsal and lateral spots. Chelicerae (Figure S36D) with pair of proximo-lateral apophyses, pair of distal apophyses with two teeth each, and pair of frontal apophyses. Pedipalp as in Figure S35A, B; trochanter with long (much longer than wide), retrolaterally strongly bulged ventral apophysis; femur with small retrolatero-proximal apophysis and indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus simple proximally but complex distally, with sclerotized, angular prolateral apophysis (arrow 1 in Figure S35C), angular prolateral membranous process (arrow 2 in Figure S35C), curved prolateral apophysis (arrow 3 in Figure S35C), curved dorsal membranous process (arrow 4 in Figure S35C), and two strong dorsal spines (arrow in Figure S35D); uncus with scales (Figure S36C); appendix absent; embolus weakly sclerotized, with some transparent distal projections (Figure S36C). Retrolateral trichobothrium of tibia I at 6% proximally; legs with short vertical setae on tibiae, metatarsi, and tarsi; tarsus I with 31 distinct pseudosegments.

Description of paratype: Female (SYNU-Ar00237). Similar to male, habitus as in Figure S36G, H. Total length 4.72 (4.86 with clypeus), carapace 1.44 long, 1.72 wide, opisthosoma 3.28 long, 1.60 wide; tibia I: 7.68; tibia I L/d: 51. Eye interdistances and diameters: PME-PME 0.20, PME 0.13, PME-ALE 0.06, AME-AME 0.06, AME 0.08. Sternum width/length: 1.07/0.82. Epigyne (Figure S36A) strongly curved posteriorly, with anterior and lateral brown marks and knob. Vulva (Figure S36B) with sclerotized anterior arch, pair of long elliptic pore plates, and pair of lateral sclerites.

Variation: Tibia I in the another paratype female (SYNU-Ar00238): 8.12.

Natural history: The species was found on rock walls.

Distribution: China (Beijing, type locality; Figure S1A).

***Pholcus zhuolu* Zhang & Zhu, 2009**

Pholcus zhuolu Zhang & Zhu, 2009a: 108, figures 64A–I, 65A–L. Yao & Li, 2012: 43, figures 225A–D, 226A–C.

Type material examined: Paratypes: 1♂, 1♀ (MHBUE), China, Hebei, Zhuolu County, Yangjiaping Village (40°18.00'N, 115°12.00'E), 6 July 2004, Feng Zhang leg.

Other material examined: 2♂ (SYNU-Ar00239, Ar00240), 2♀ (SYNU-Ar00241, Ar00242), China, Hebei, Zhangjiakou, Zhuolu County, Yangjiaping Natural Reserve (39°58.58'N, 115°23.75'E, 892 m), 26 June 2021, Hui-Feng Zhao & Hai-Feng Chen leg.

Diagnosis: The species can be easily distinguished from all known congeners by procursus with curved, sclerotized prolateral apophysis, large prolateral membranous lamella, and dorsal sclerite (figure 225C, D in Yao & Li, 2012) and by vulval pore plates widely separated (figure 226B in Yao & Li, 2012).

Description (amended): Male (SYNU-Ar00239). Cheliceral distal apophyses with two teeth each. Pedipalpal trochanter with short (as wide as long), retrolaterally strongly bulged ventral apophysis; femur with indistinct ventral protuberance; tibia with prolatero-ventral projection; procursus with

curved, sclerotized prolateral apophysis, large prolateral membranous lamella, and dorsal sclerite.

Natural history: The species was found on rock walls.

Distribution: China (Hebei, Figure S1A).

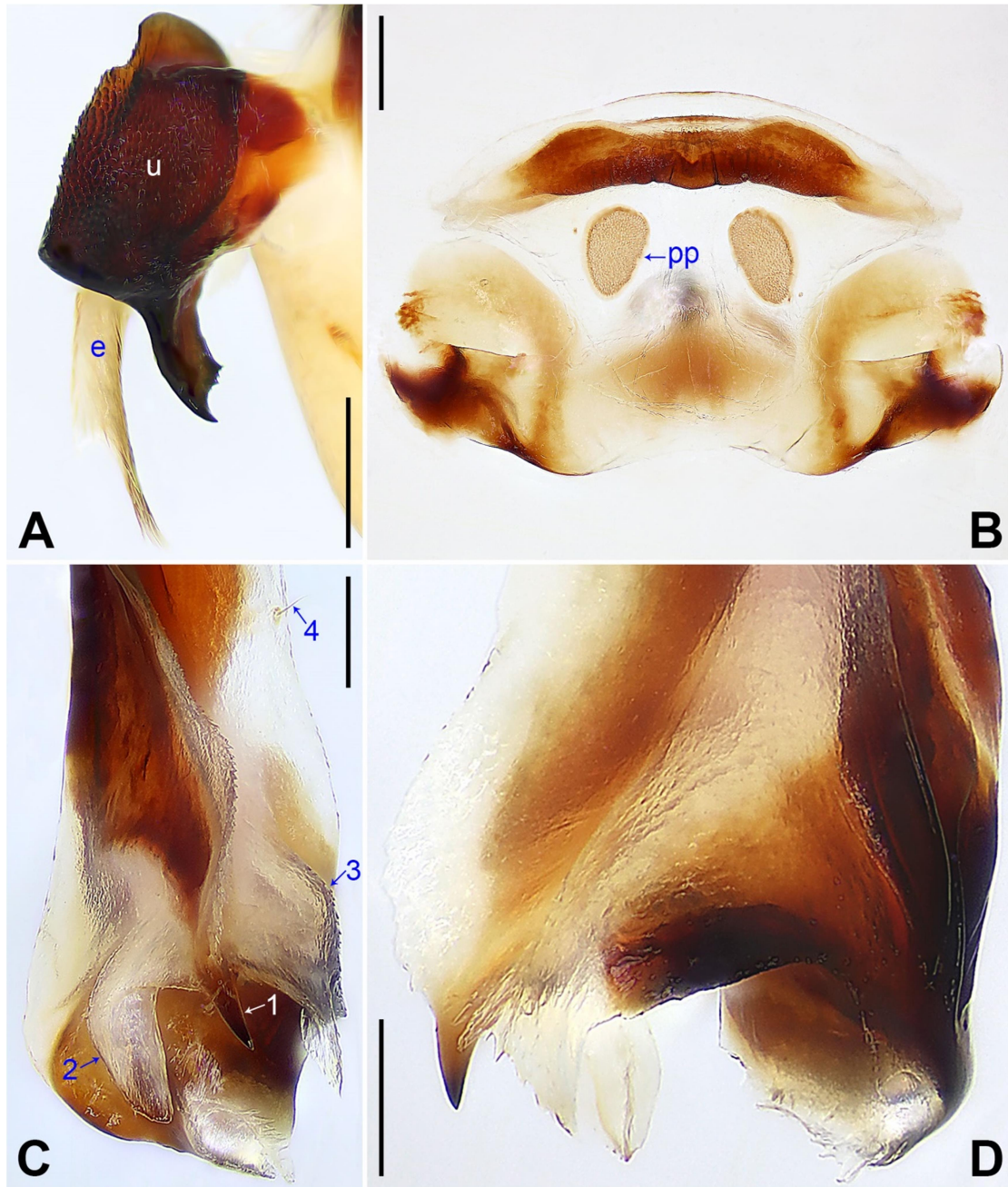
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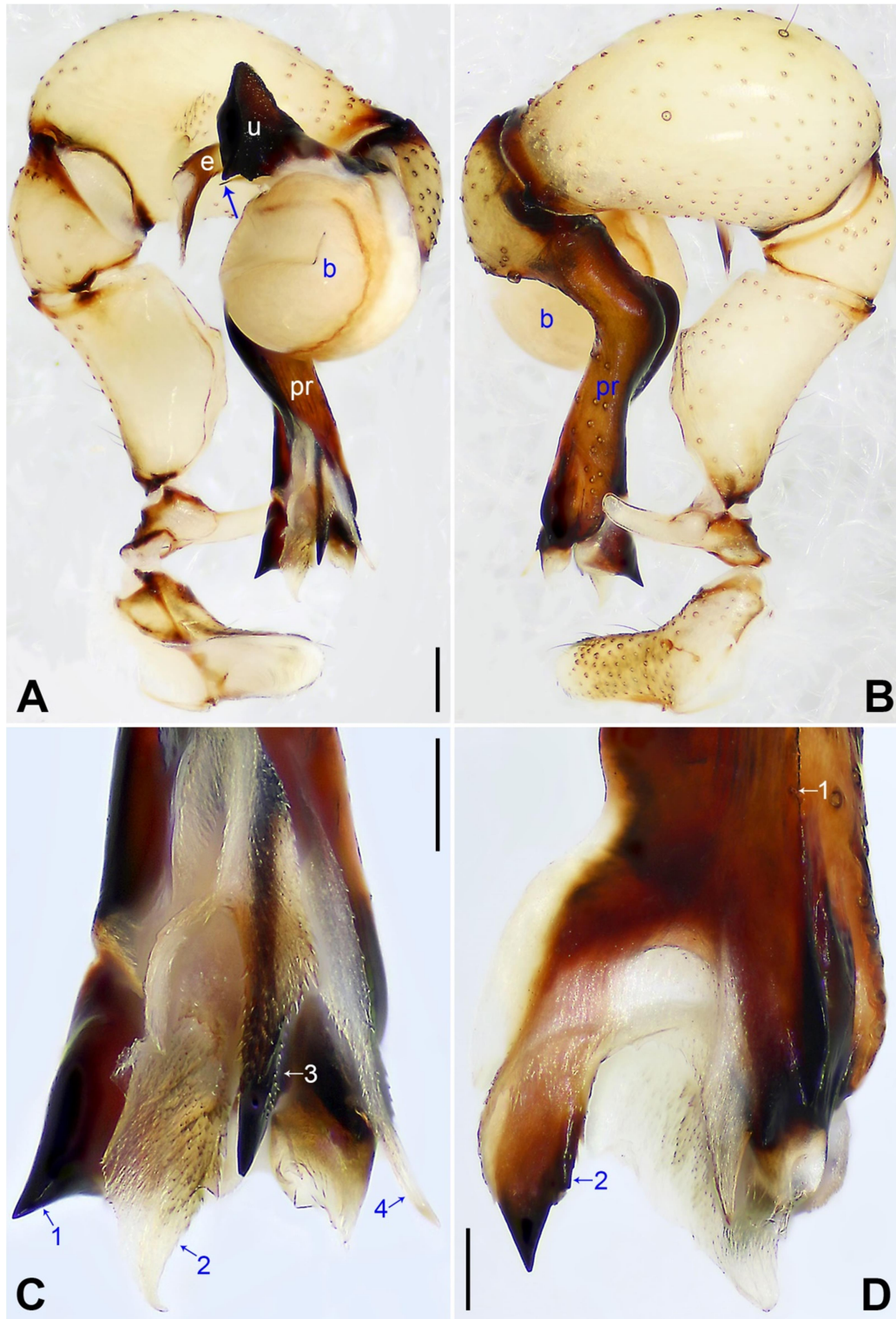
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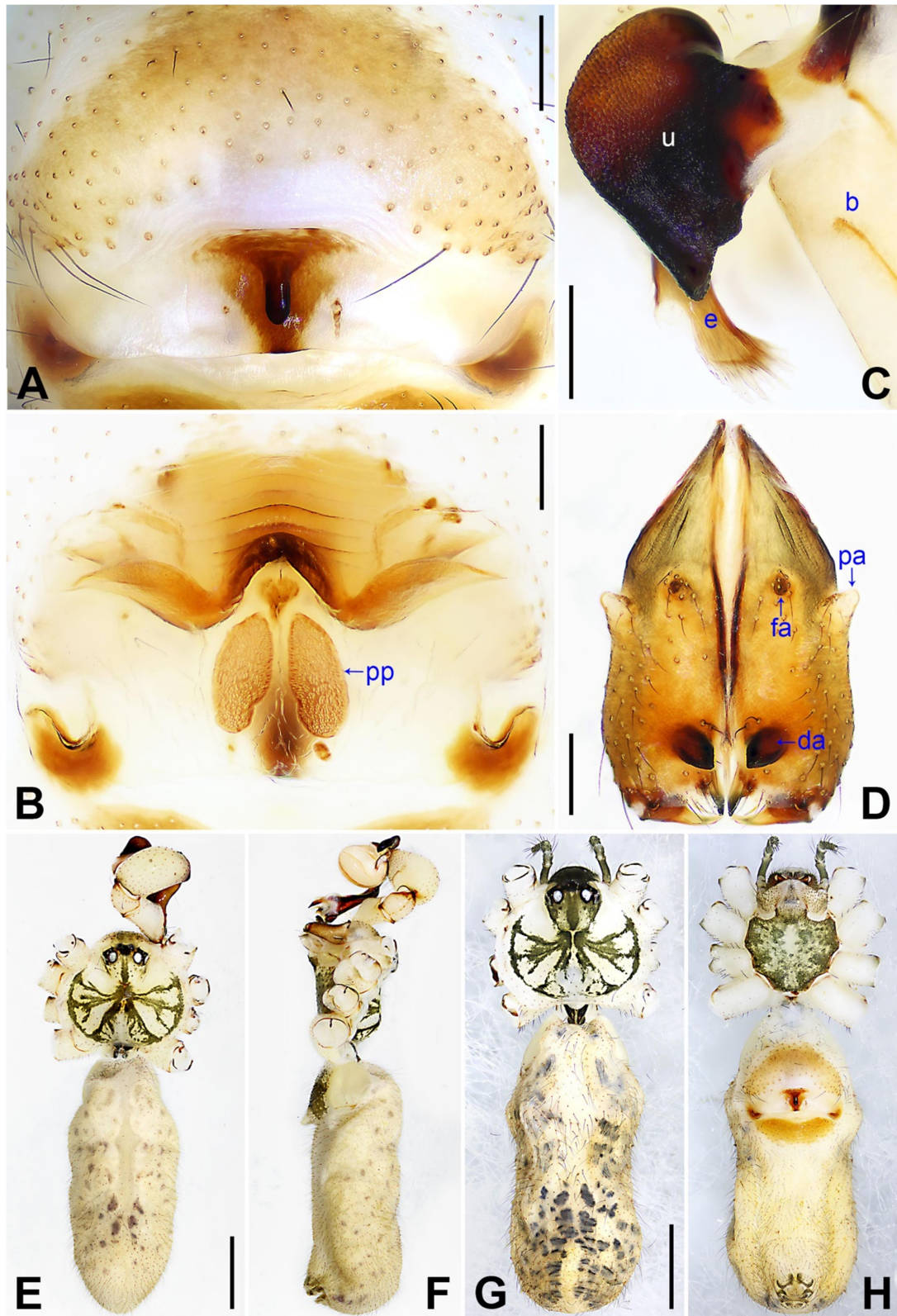
Supplementary Figure S1 Distribution of the *Pholcus phungiformes* species group and the results of species delimitation analyses A: Distribution of the *Pholcus phungiformes* species group from the Yanshan-Taihang Mountains. B: Phylogenetic tree inferred from ML analysis, bootstrap values (>50)/Bayesian posterior probabilities (>0.85) are provided at the nodes (species delimitation methods are presented on the right and bottom, different colors of the boxes represent the different methods). C: Distal part of procurus in prolateral view. 1: *P. luya*; 2: *P. clavimaculatus*; 3: *P. wangxidong*; 4: *P. datong* **sp. nov.**; 5: *P. guangling* **sp. nov.**; 6: *P. beijingensis*; 7: *P. tang* **sp. nov.**; 8: *P. chengde* **sp. nov.**; 9: *P. triangulatus*; 10: *P. zhuolu*; 11: *P. xinzhou* **sp. nov.**; 12: *P. papilionis*; 13: *P. changchi* **sp. nov.**; 14: *P. pennatus*; 15: *P. hunyuan* **sp. nov.**; 16: *P. curvus*; 17: *P. alloctospilus*; 18: *P. brevis*; 19: *P. jinniu*; 20: *P. wuling*; 21: *P. chicheng*; 22: *P. huailai* **sp. nov.**; 23: *P. babao*; 24: *P. luanping* **sp. nov.**; 25: *P. datan*; 26: *P. fengning* **sp. nov.**; 27: *P. yanqing* **sp. nov.**; 28: *P. kuaile* **sp. nov.**; 29: *P. tongyaoi*; 30: *P. lexuancanhi*; 31: *P. xinglong* **sp. nov.**; 32: *P. exilis*; 33: *P. suizhongicus*; 34: *P. auricularis*; 35: *P. papillatus*.



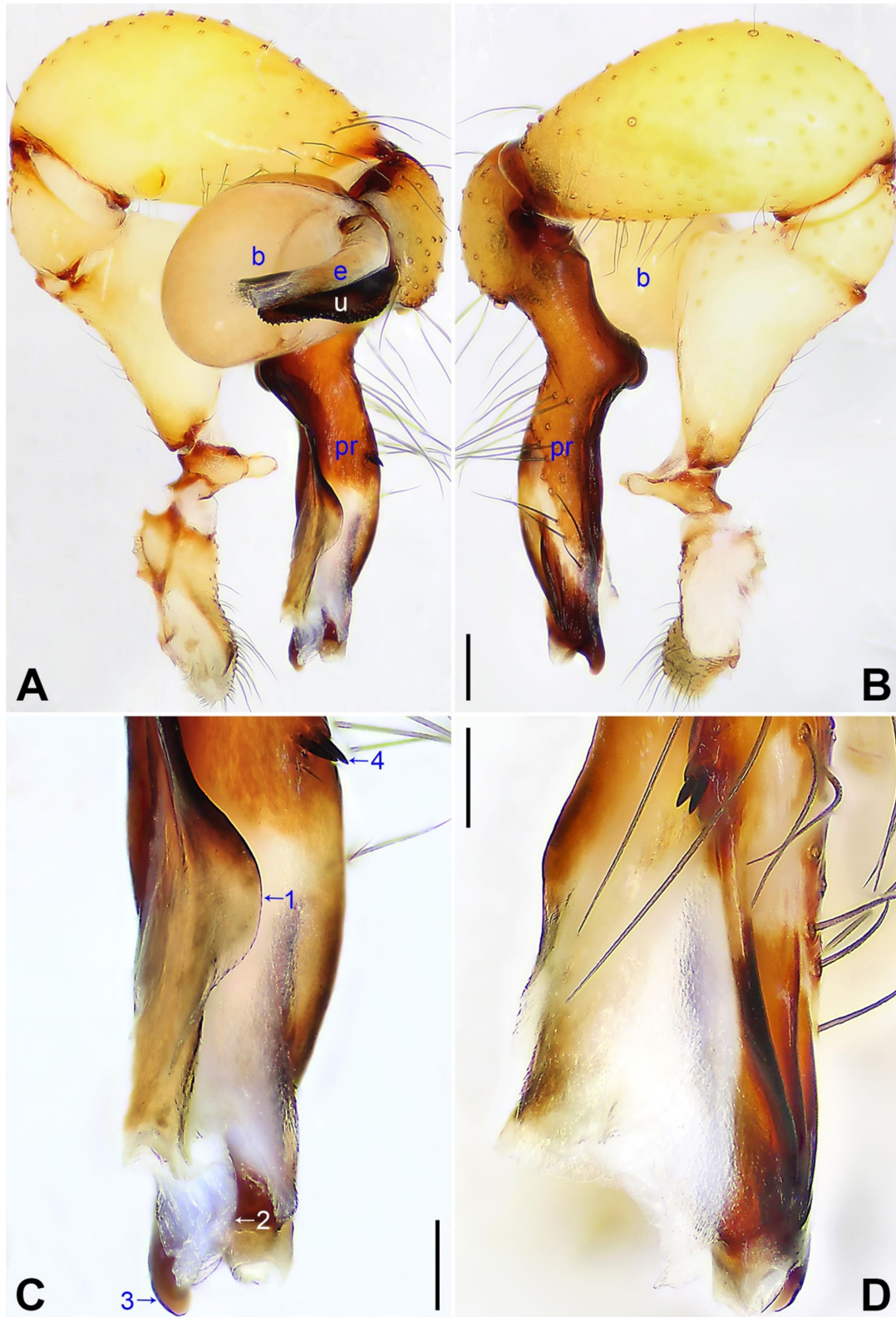
Supplementary Figure S2 *Pholcus babao* Tong & Li, 2010 A: Bulbal apophyses, prolateral view; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at sclerotized prolateral apophysis, arrow 2 points at prolateral membranous process, arrow 3 points at dorsal membranous process, arrow 4 points at dorsal spine; D: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



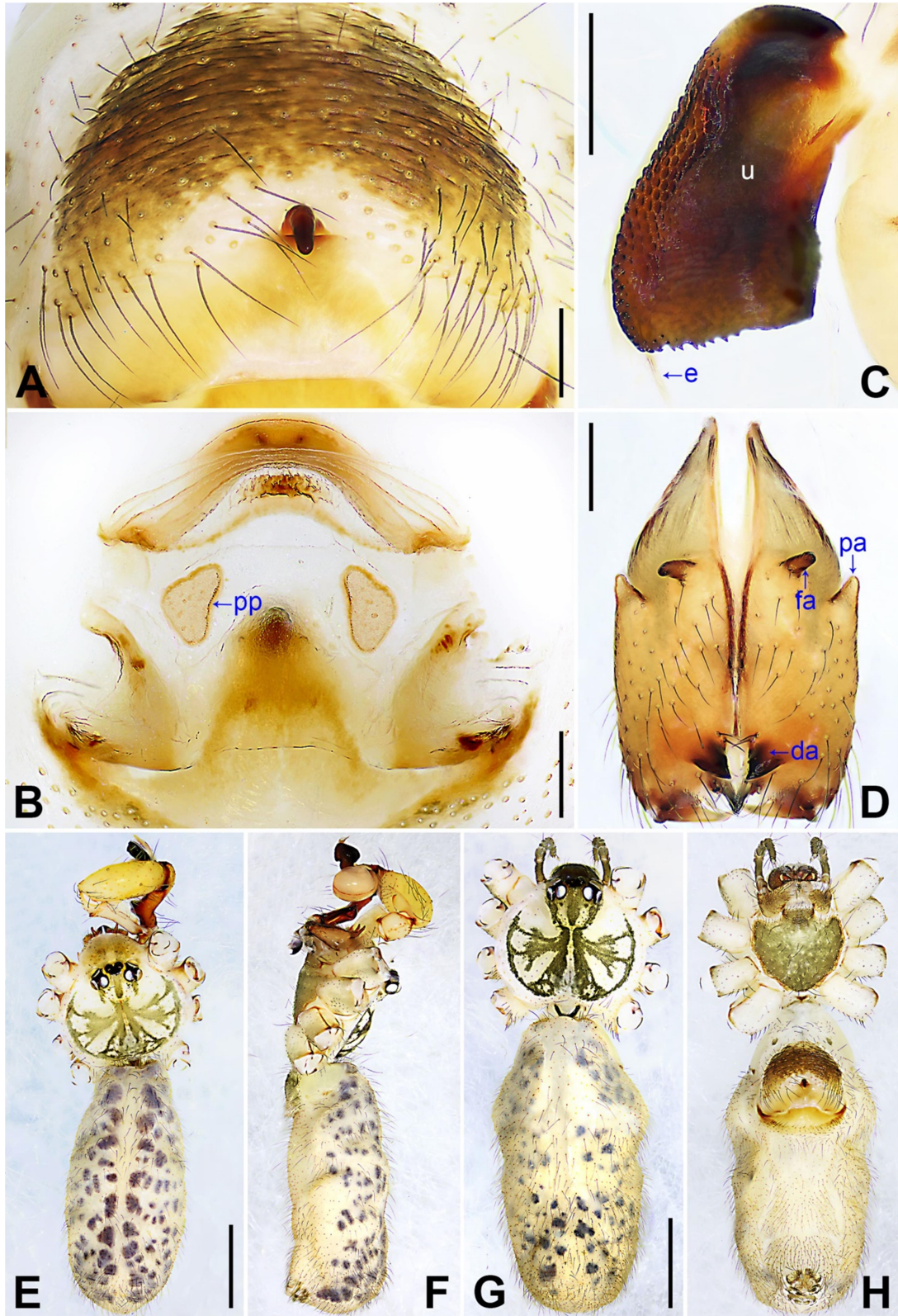
Supplementary Figure S3 *Pholcus changchi* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view, arrow points at ‘pseudo-appendix’; B: Retrolateral view); C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at sclerotized ventral apophysis, arrow 2 points at prolateral membranous lamella, arrow 3 points at sclerotized prolateral apophysis, arrow 4 points at dorsal membranous process; D: Dorsal view, arrow 1 points at dorsal spine, arrow 2 points at sclerotized prolateral apophysis). b = bulb, e = embolus, pr = procurus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



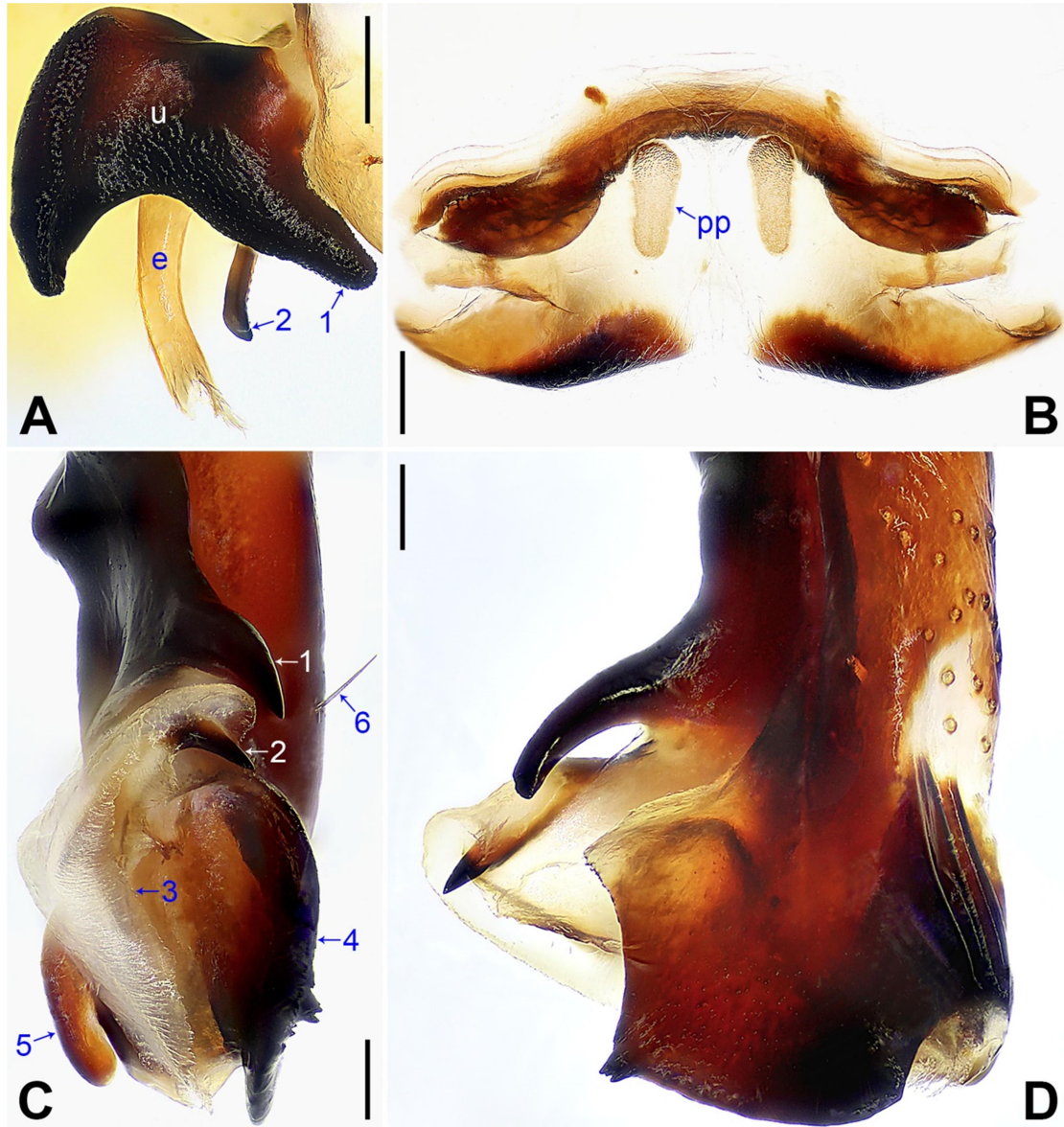
Supplementary Figure S4 *Pholcus changchi* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). b = bulb, da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



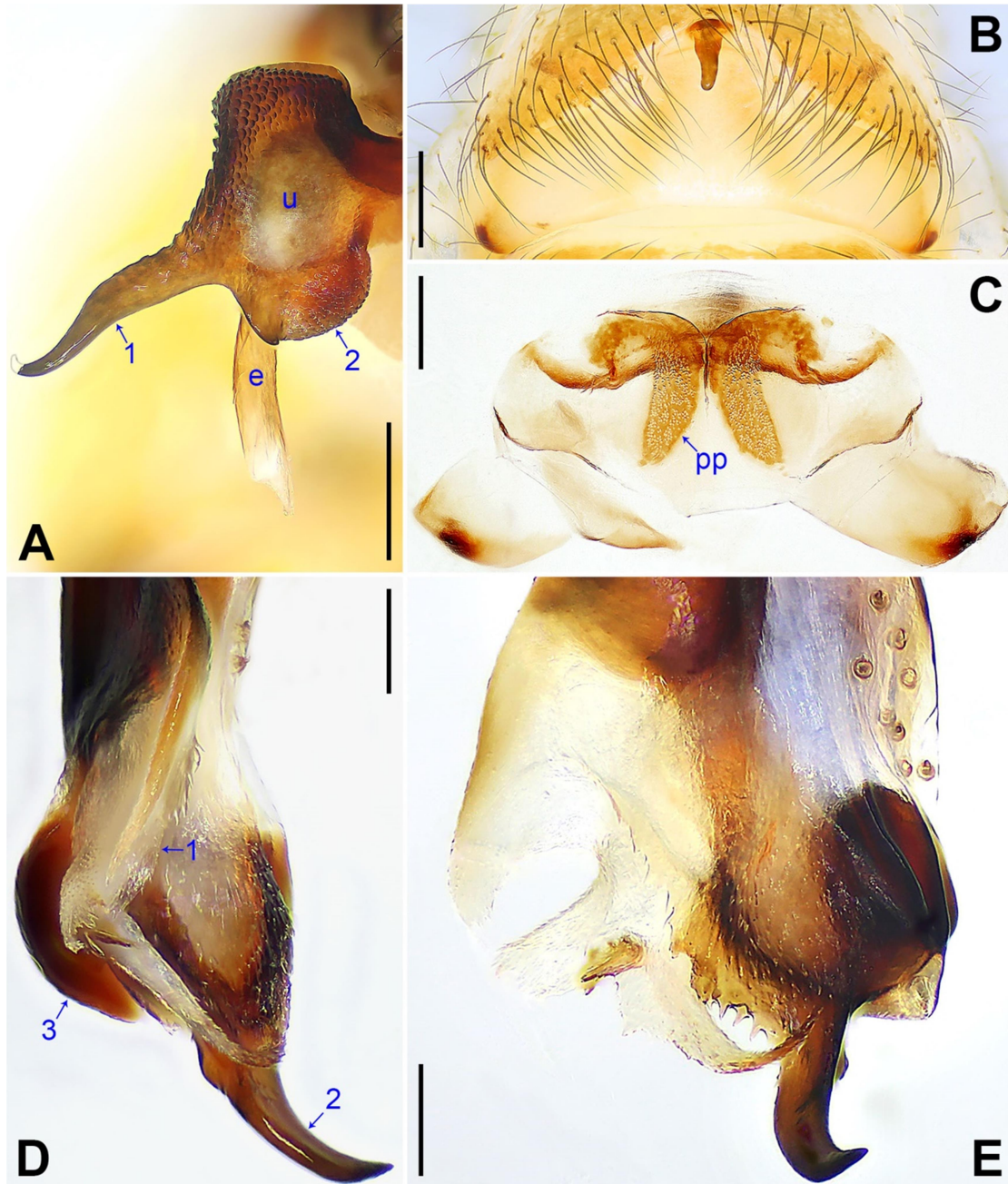
Supplementary Figure S5 *Pholcus chengde* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at curved prolateral sclerite, arrow 2 points at distal membranous process, arrow 3 points at sclerotized ventral apophysis, arrow 4 points at dorsal spines; D: Dorsal view). b = bulb, e = embolus, pr = procurus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



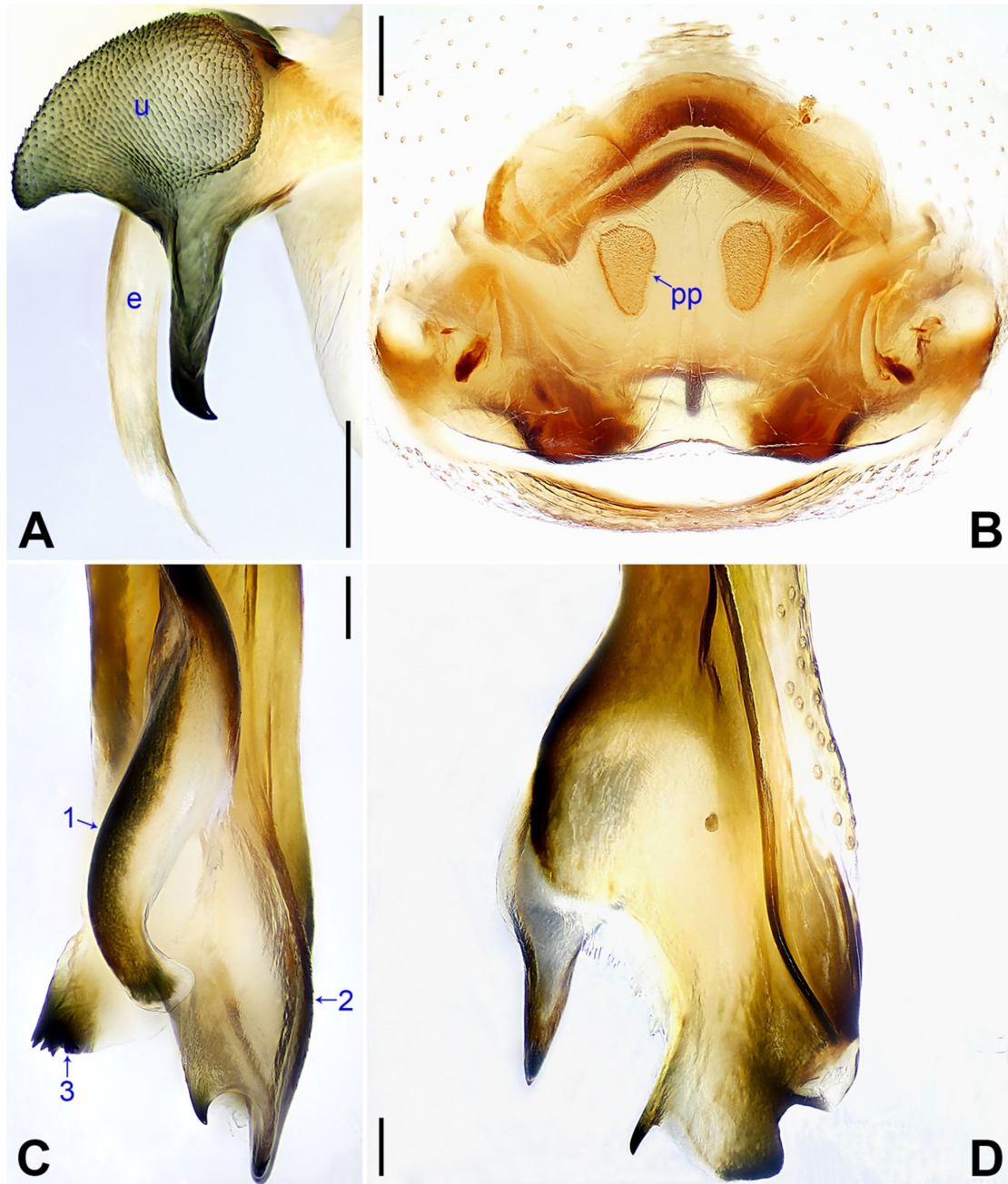
Supplementary Figure S6 *Pholcus chengde* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



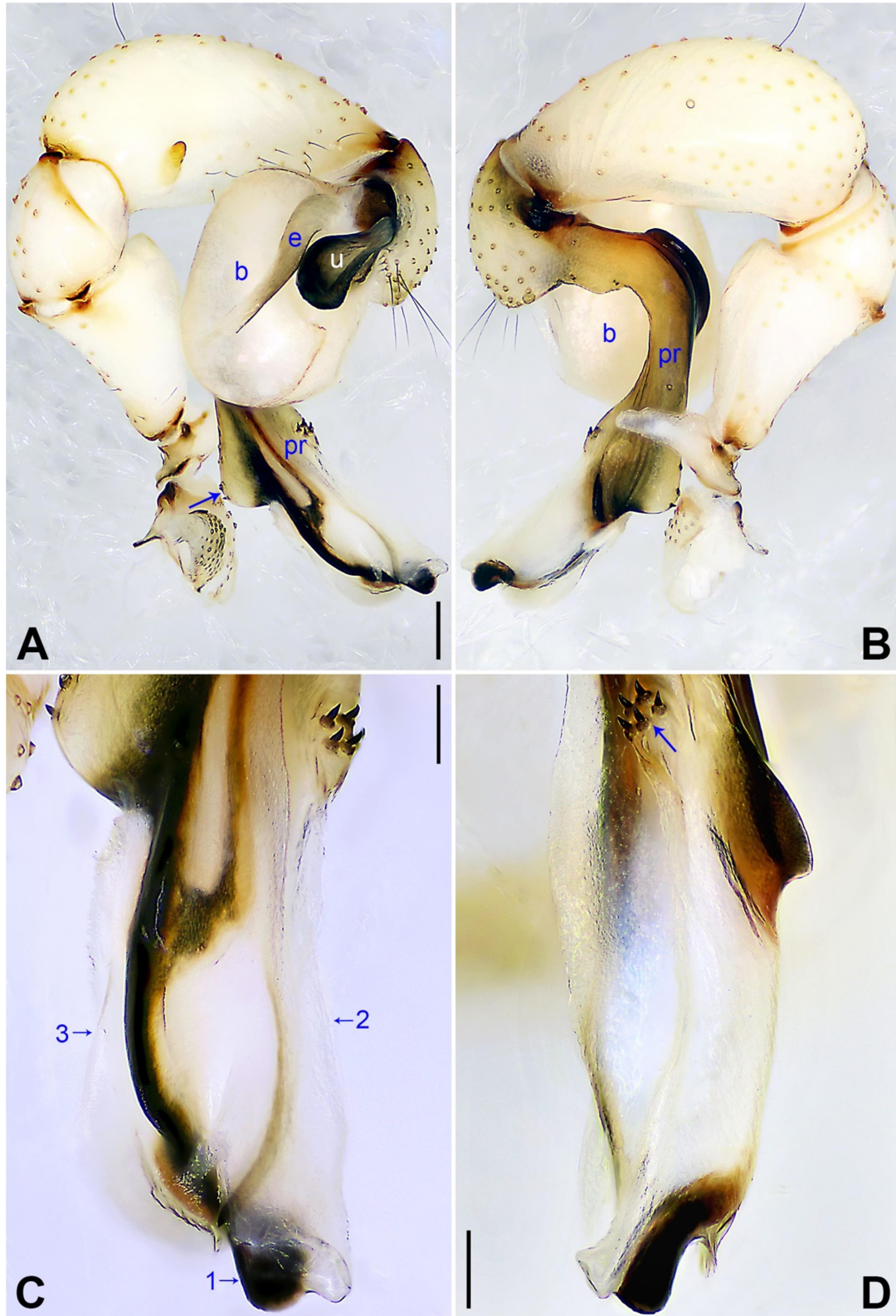
Supplementary Figure S7 *Pholcus chicheng* Tong & Li, 2010 A: Bulbal apophyses, prolateral view, arrow 1 points at thick proximal apophysis, arrow 2 points at 'pseudo-appendix'; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at sclerotized prolateral apophysis, arrow 2 points at spine-shaped prolateral apophysis, arrow 3 points at prolateral membranous process, arrow 4 points at large dorsal sclerite, arrow 5 points at sclerotized ventral apophysis, arrow 6 points at dorsal spine; D: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



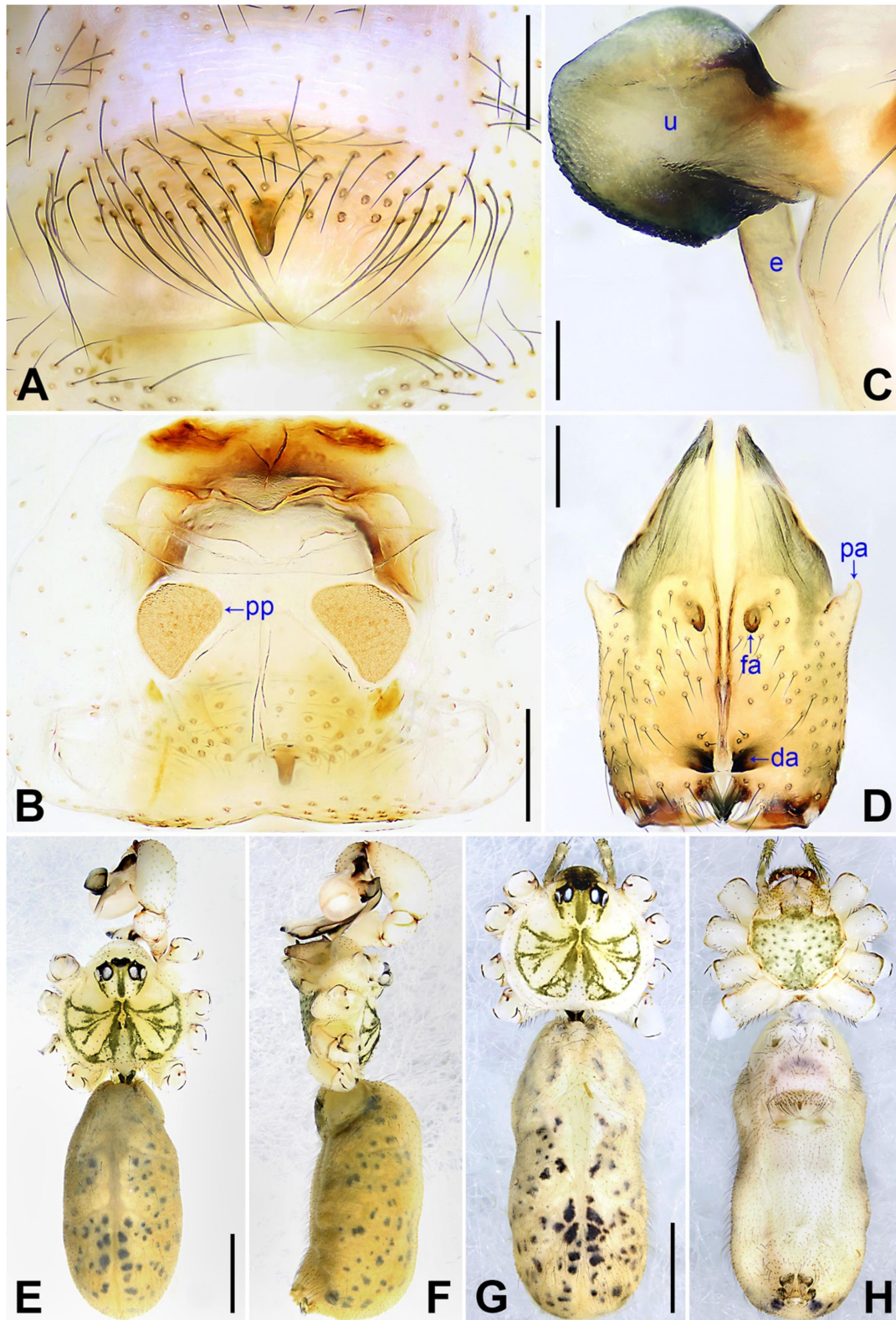
Supplementary Figure S8 *Pholcus curvus* Zhang, Zhang & Liu, 2016 A: Bulbal apophyses, prolateral view, arrow 1 points at curved distal apophysis, arrow 2 points at semi-circular proximal apophysis; B: Epigyne, ventral view; C: Vulva, dorsal view; D, E: Distal part of procurus (D: Prolateral view, arrow 1 points at prolateral membranous process, arrow 2 points at curved distal apophysis, arrow 3 points at ventral sclerite; E: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A–C), 0.10 (D, E).



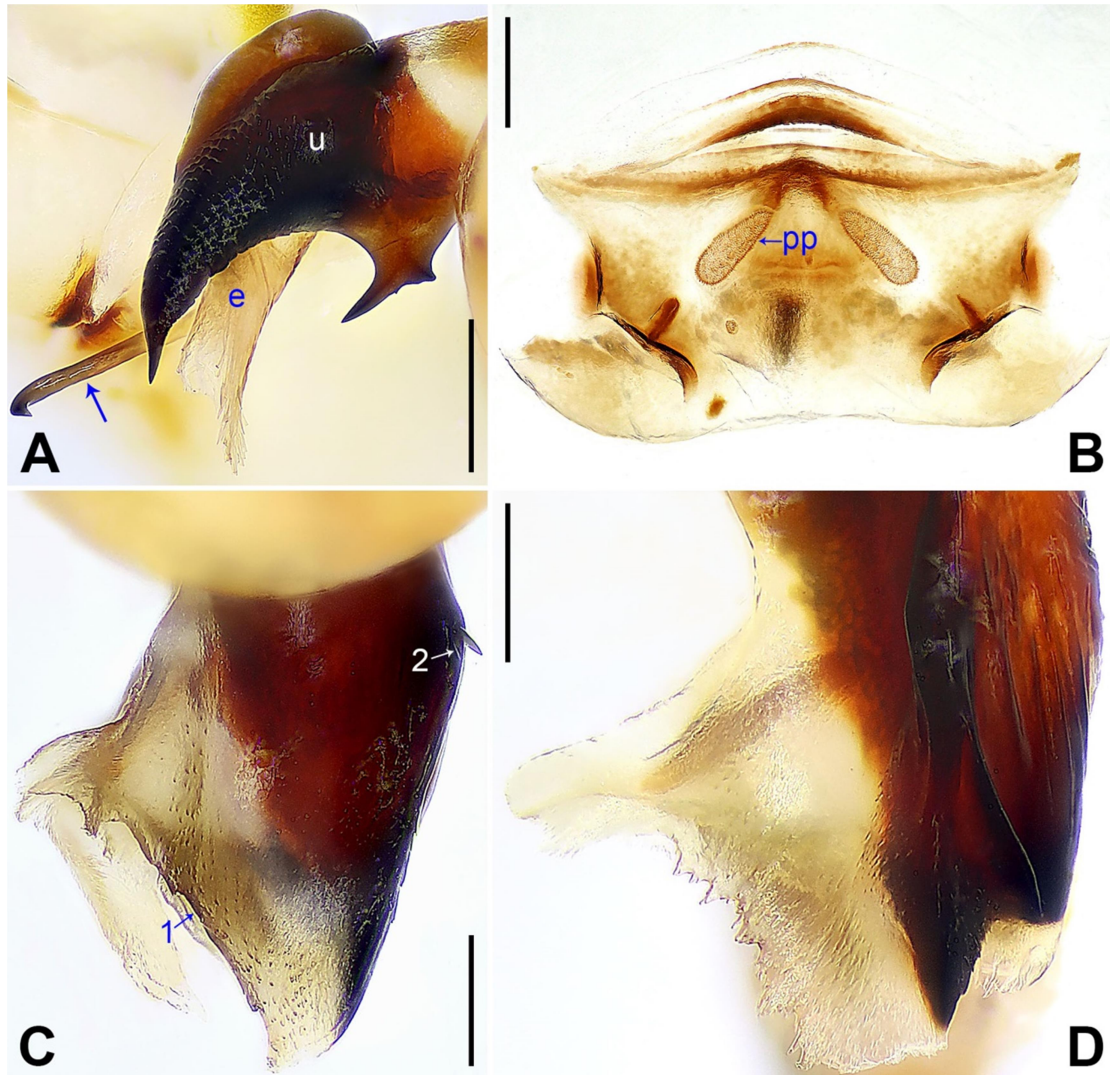
Supplementary Figure S9 *Pholcus datan* Tong & Li, 2010 A: Bulbal apophyses, prolateral view; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at sclerotized prolateral apophysis, arrow 2 points at distally bifurcated dorsal apophysis, arrow 3 points at ventral sclerite; D: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



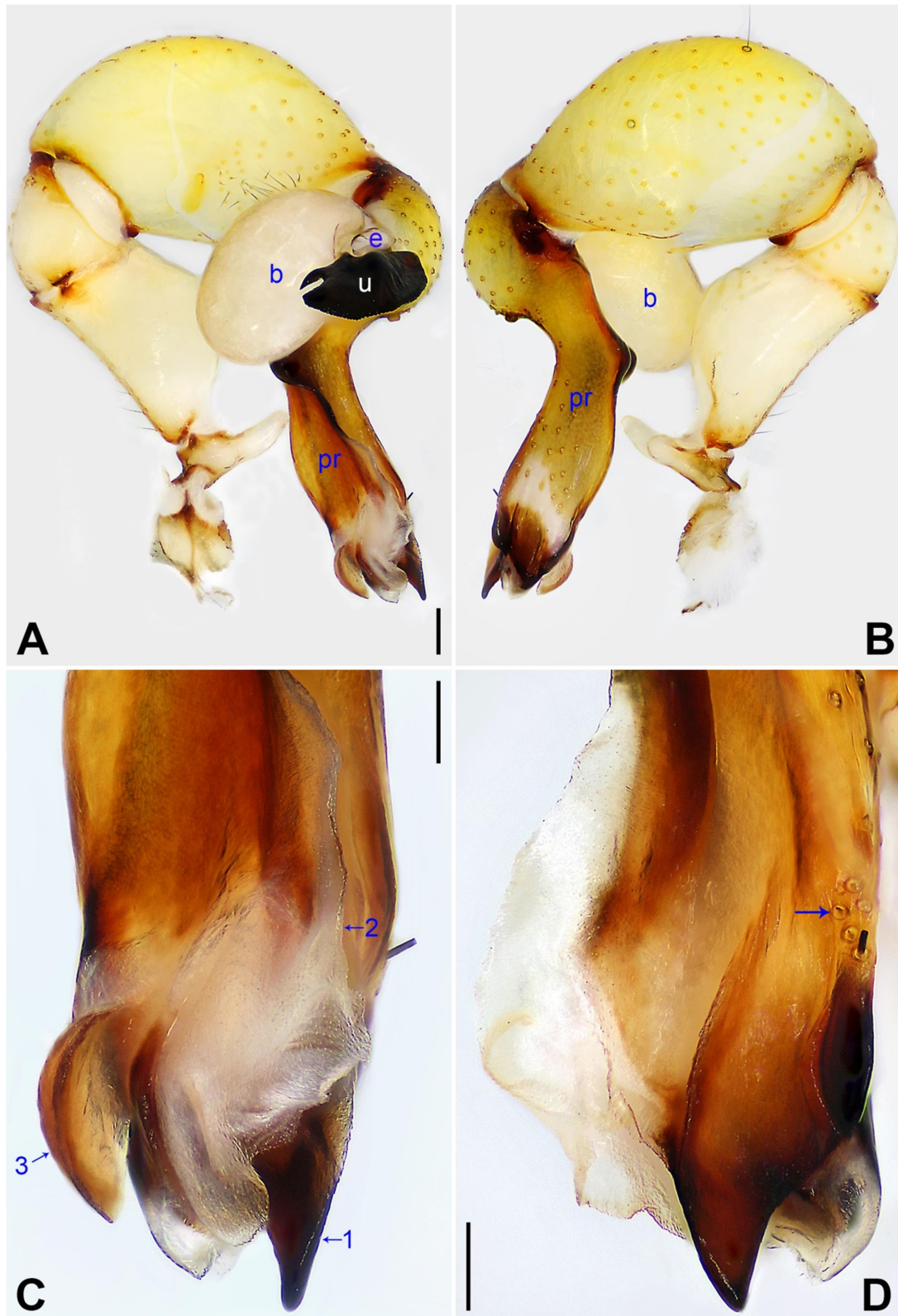
Supplementary Figure S10 *Pholcus datong* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view, arrow points at ventral spines; B: Retrolateral view); C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at sclerotized distal apophysis, arrow 2, 3 point at dorsal and ventral membranous process, respectively; D: Dorsal view, arrow points at dorsal spines). b = bulb, e = embolus, pr = procurus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



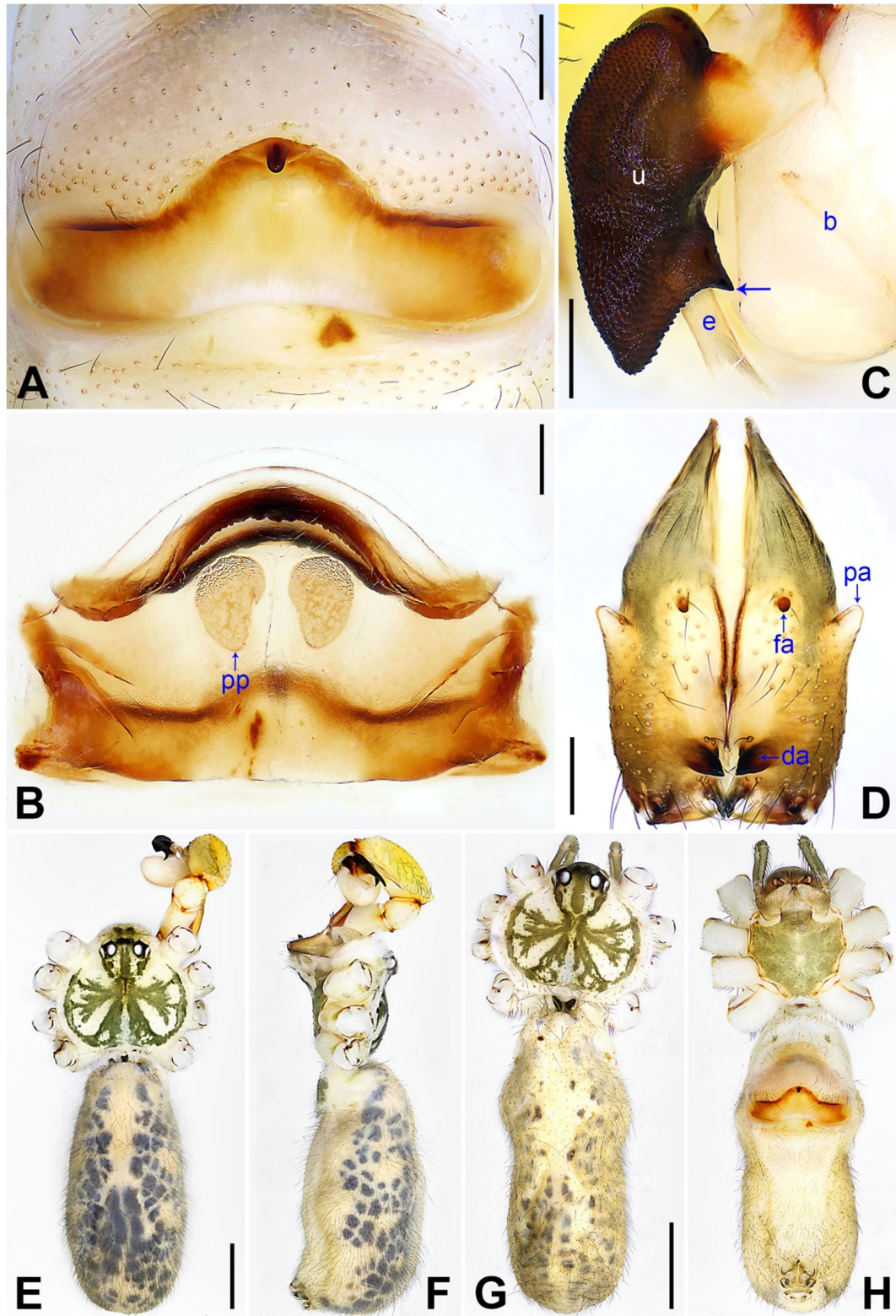
Supplementary Figure S11 *Pholcus datong* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B, D), 0.10 (C), 1.00 (E–H).



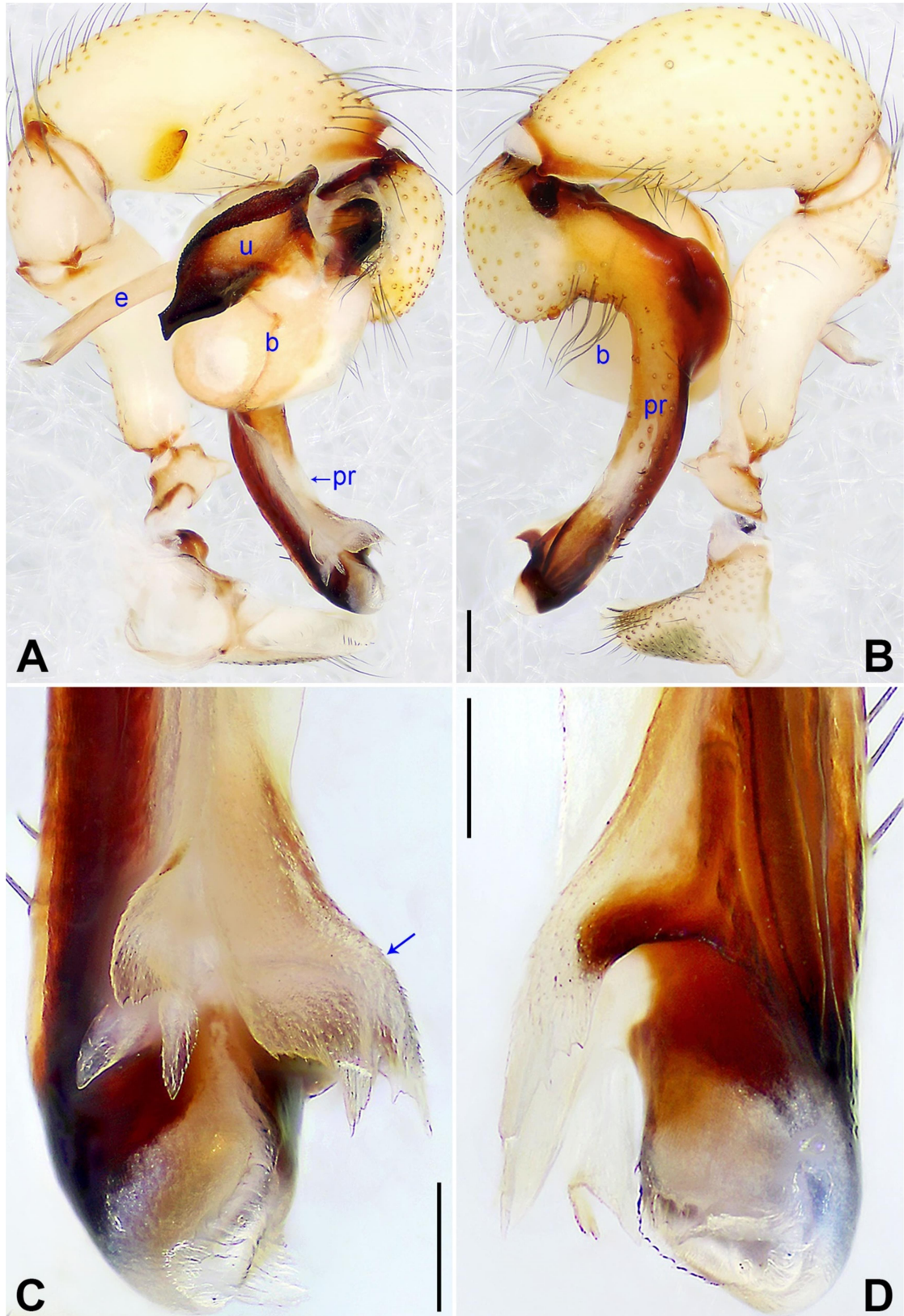
Supplementary Figure S12 *Pholcus exilis* Tong & Li, 2010 A: Bulbal apophyses, prolateral view, arrow points at 'pseudo-appendix'; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at curved prolateral membranous process, arrow 2 points at dorsal spines; D: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



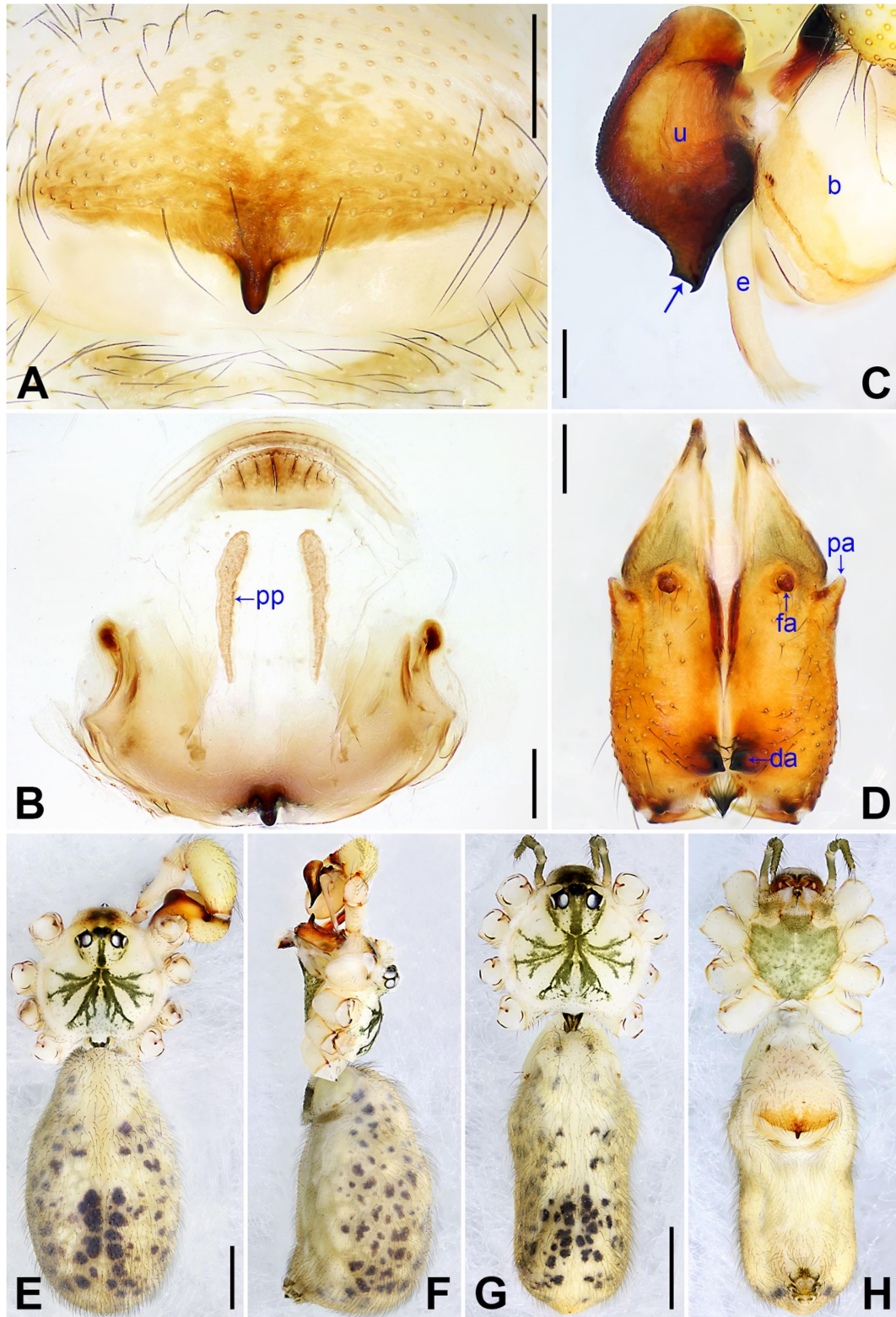
Supplementary Figure S13 *Pholcus fengning* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at sclerotized disto-dorsal apophysis, arrow 2 points at prolateral membranous process, arrow 3 points at ventral sclerite; D: Dorsal view, arrow points at dorsal spines). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



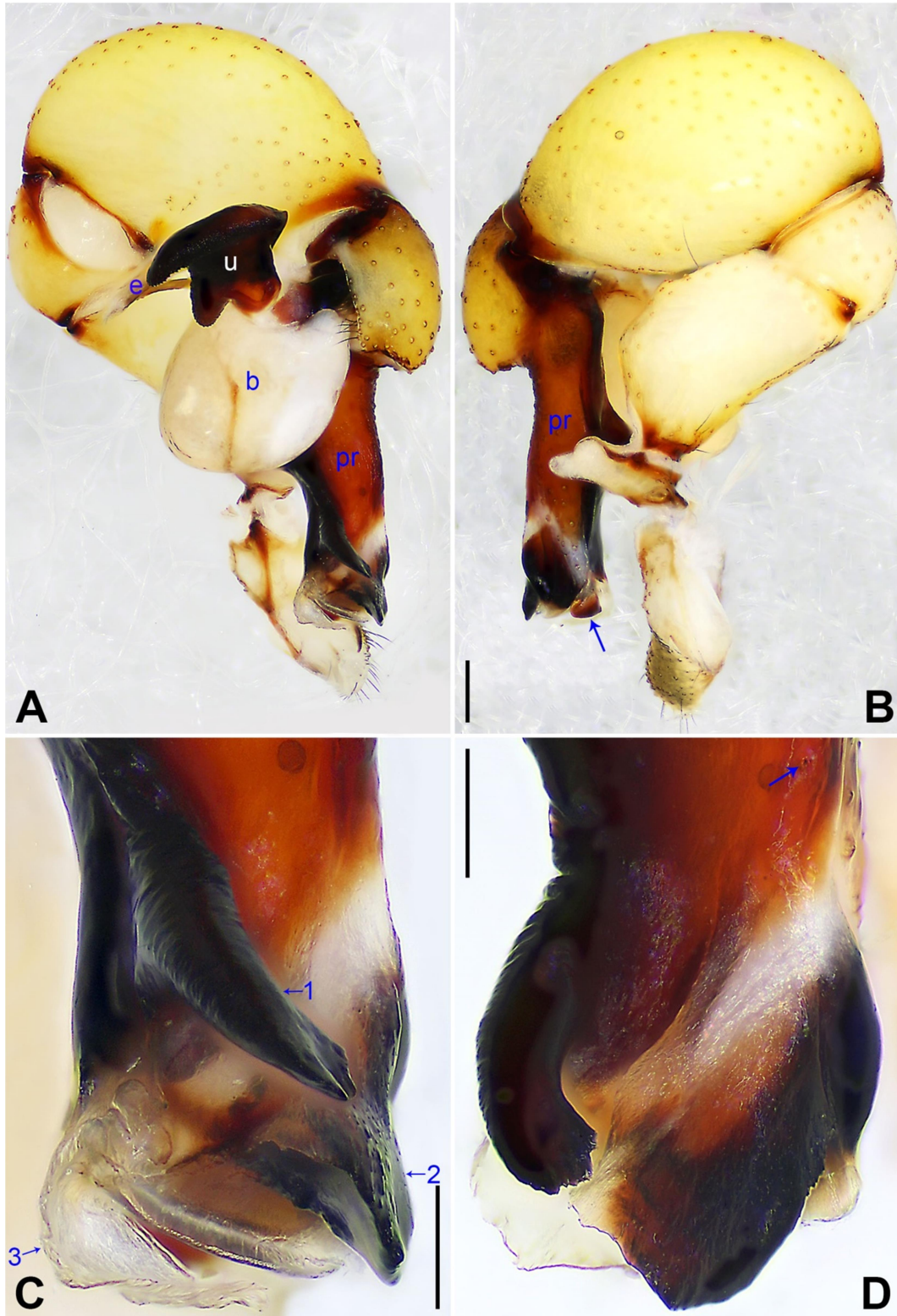
Supplementary Figure S14 *Pholcus fengning* sp. nov., holotype (D–F) and paratype (C) males, paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrow points at angular proximal apophysis; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). b = bulb, da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



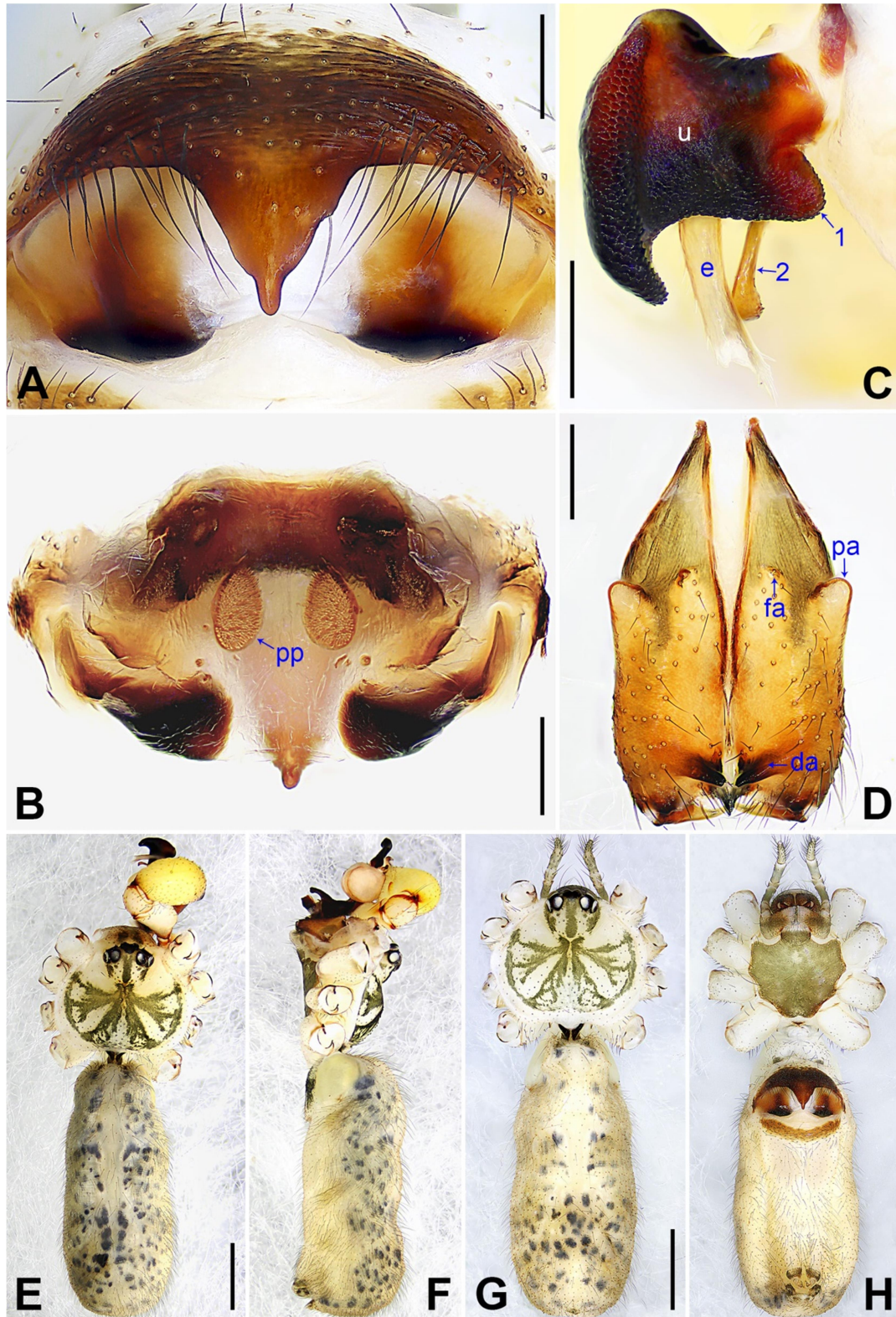
Supplementary Figure S15 *Pholcus guangling* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow points at prolateral membranous process; D: Dorsal view). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



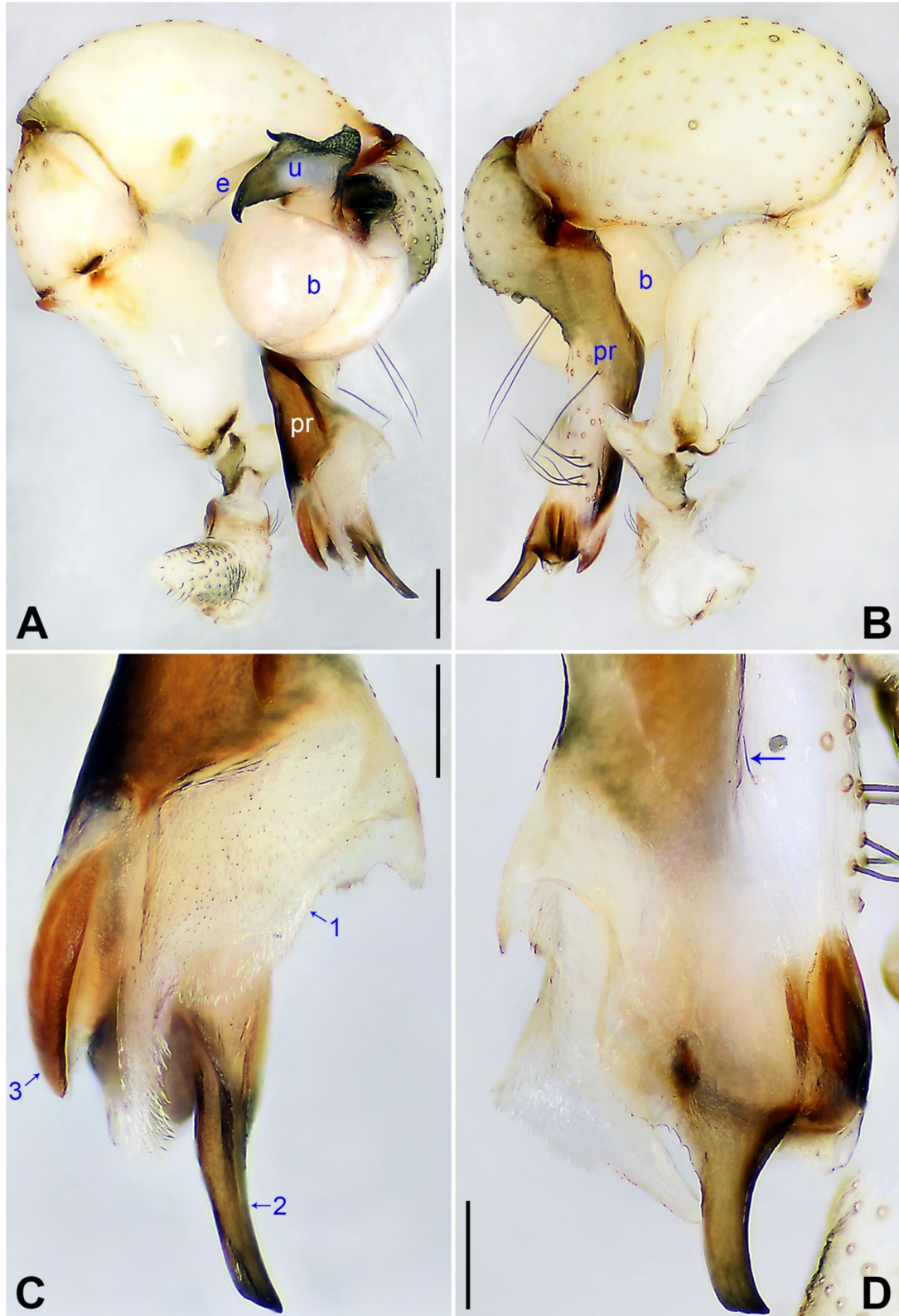
Supplementary Figure S16 *Pholcus guangling* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrow points at distal apophysis; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). b = bulb, da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



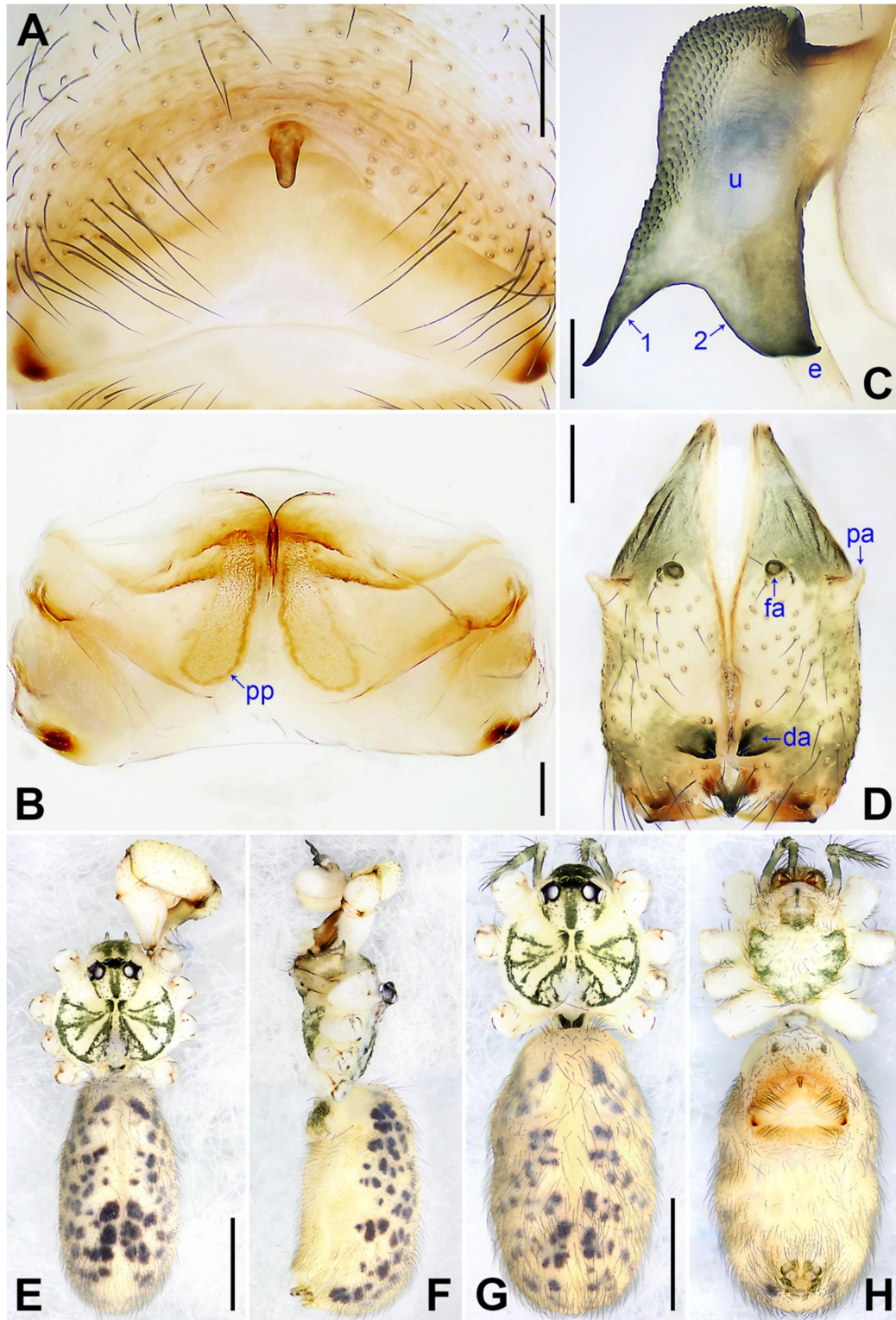
Supplementary Figure S17 *Pholcus huailai* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view, arrow points at ventral sclerite); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at sclerotized prolateral apophysis, arrow 2 points at disto-dorsal sclerite, arrow 3 points at prolateral membranous process; D: Dorsal view, arrow points at dorsal spine). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



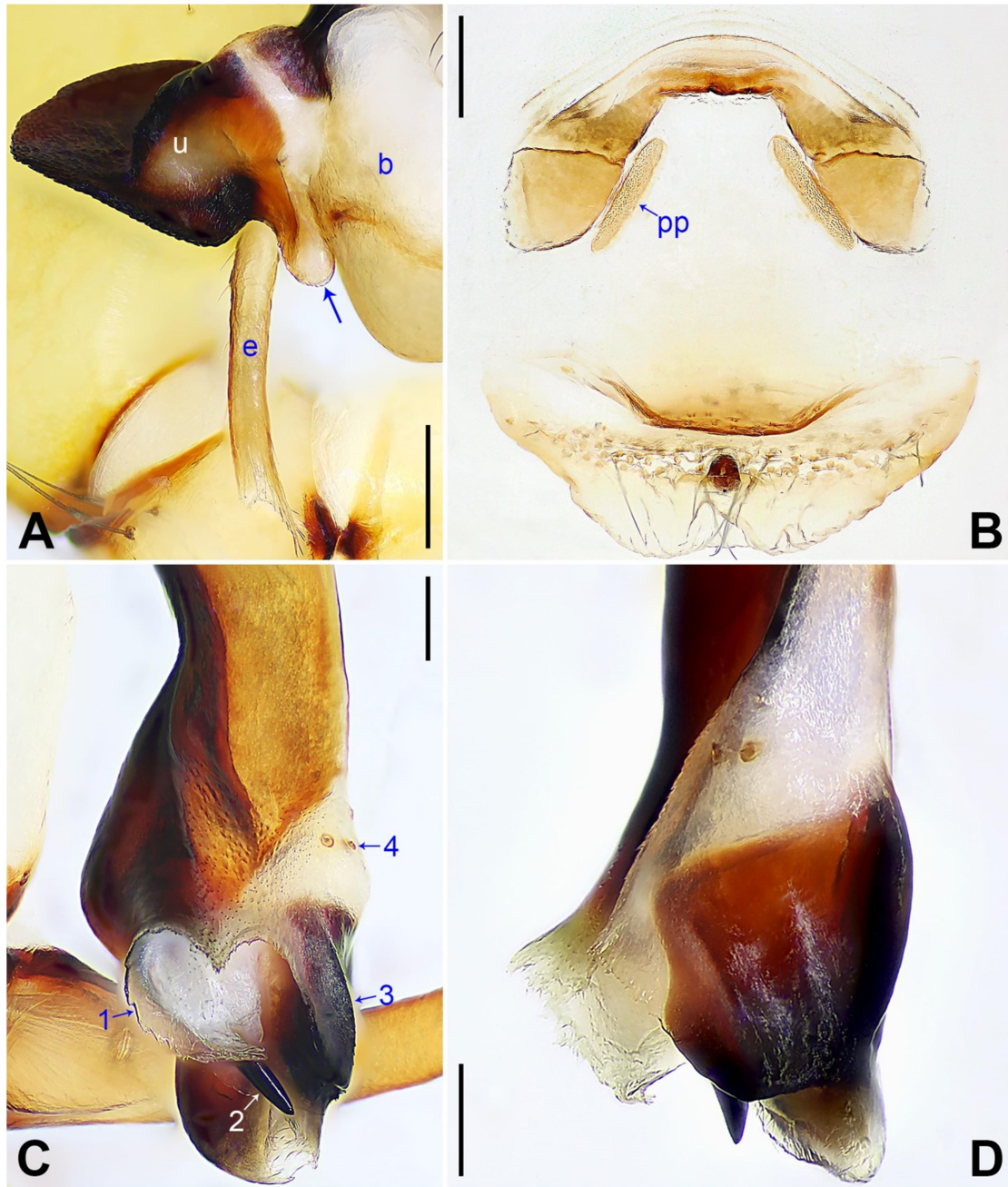
Supplementary Figure S18 *Pholcus huailai* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrow 1 points at angular proximal apophysis, arrow 2 points at ‘pseudo-appendix’; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



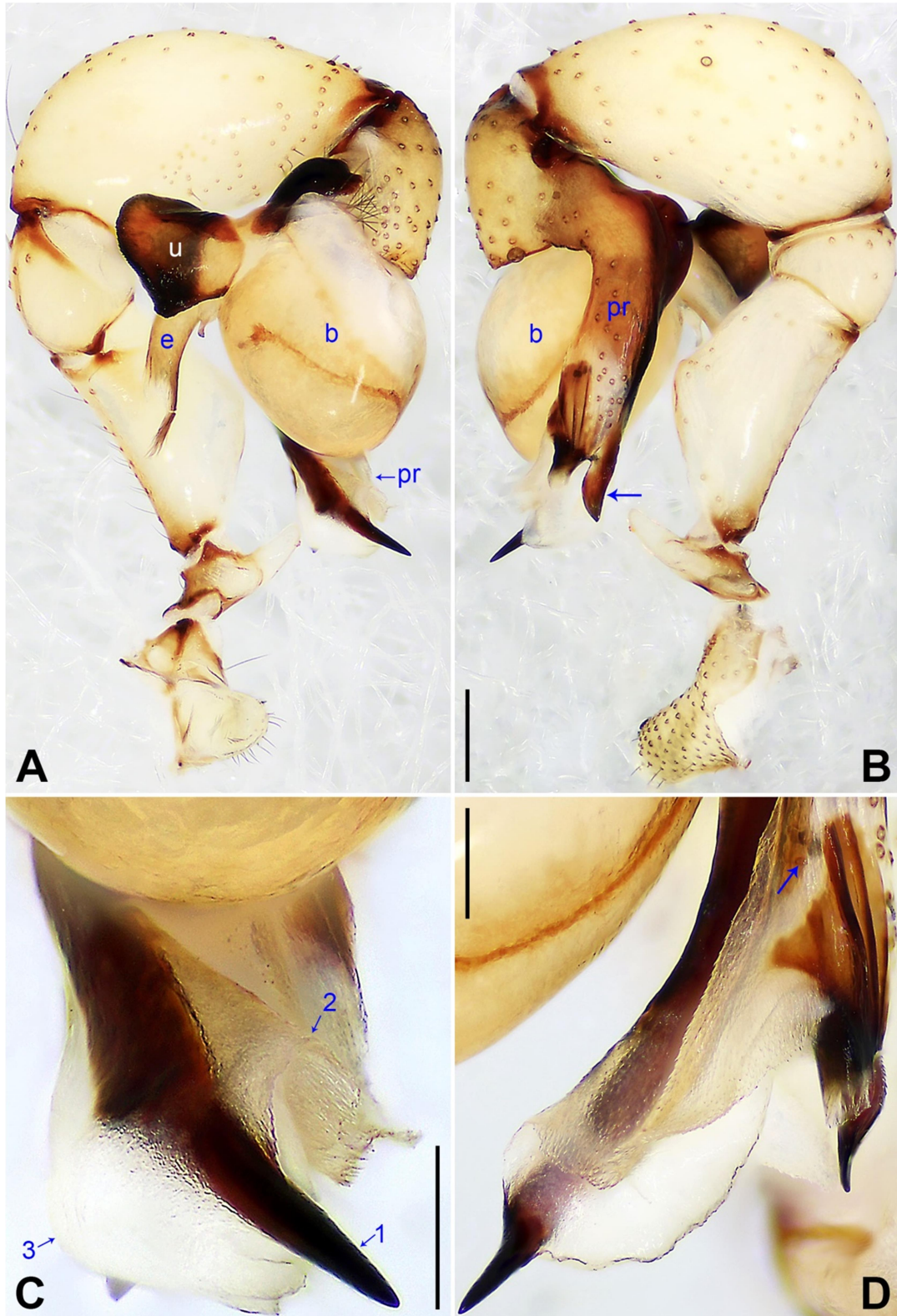
Supplementary Figure S19 *Pholcus hunyuan* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at prolateral membranous process, arrow 2 points at sclerotized distal apophysis, arrow 3 points at sclerotized ventral apophysis; D: Dorsal view, arrow points at dorsal spine). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



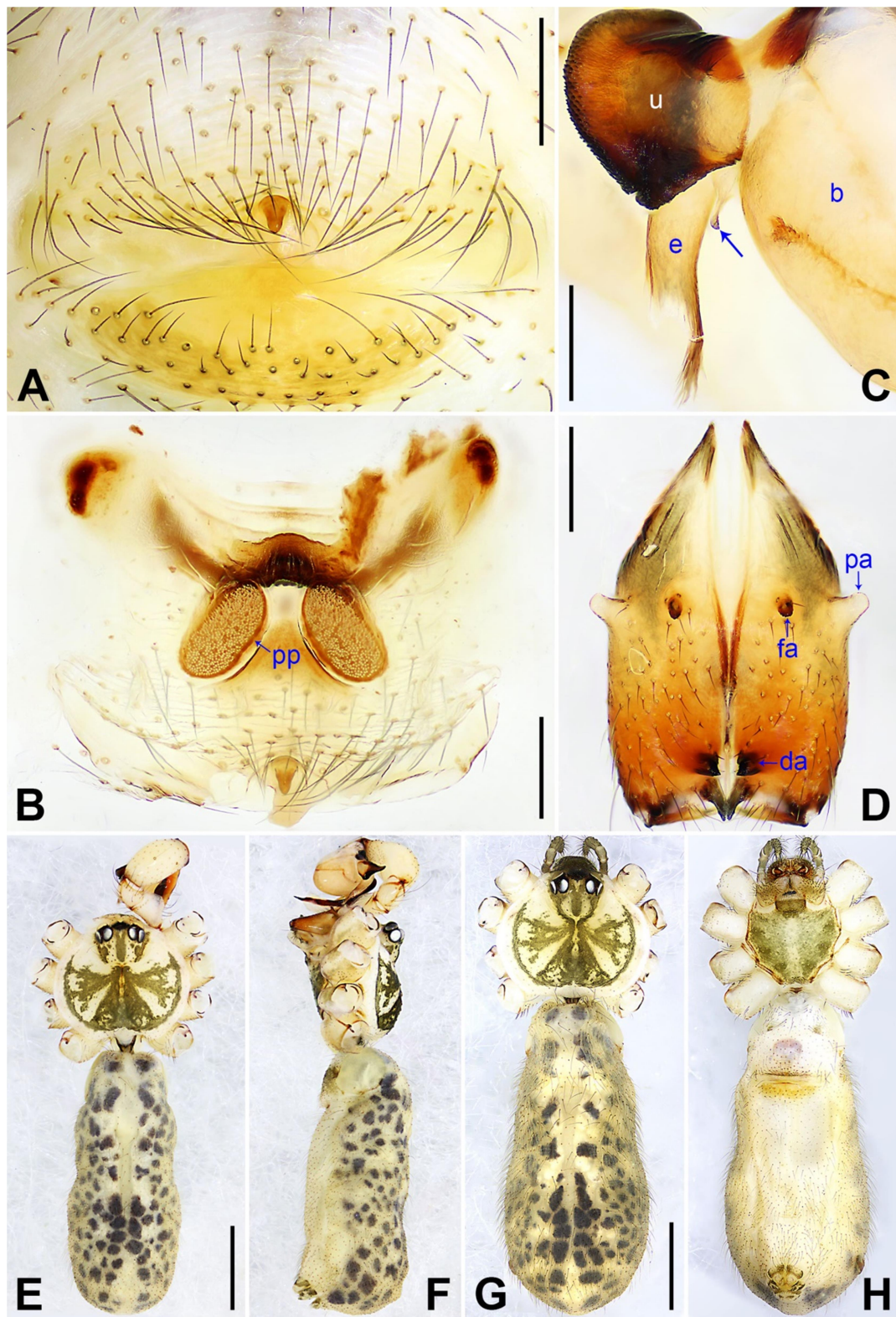
Supplementary Figure S20 *Pholcus hunyuan* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrow 1 points at angular distal apophysis, arrow 2 points at nearly trapezoidal proximal apophysis; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A, D), 0.10 (B, C), 1.00 (E–H).



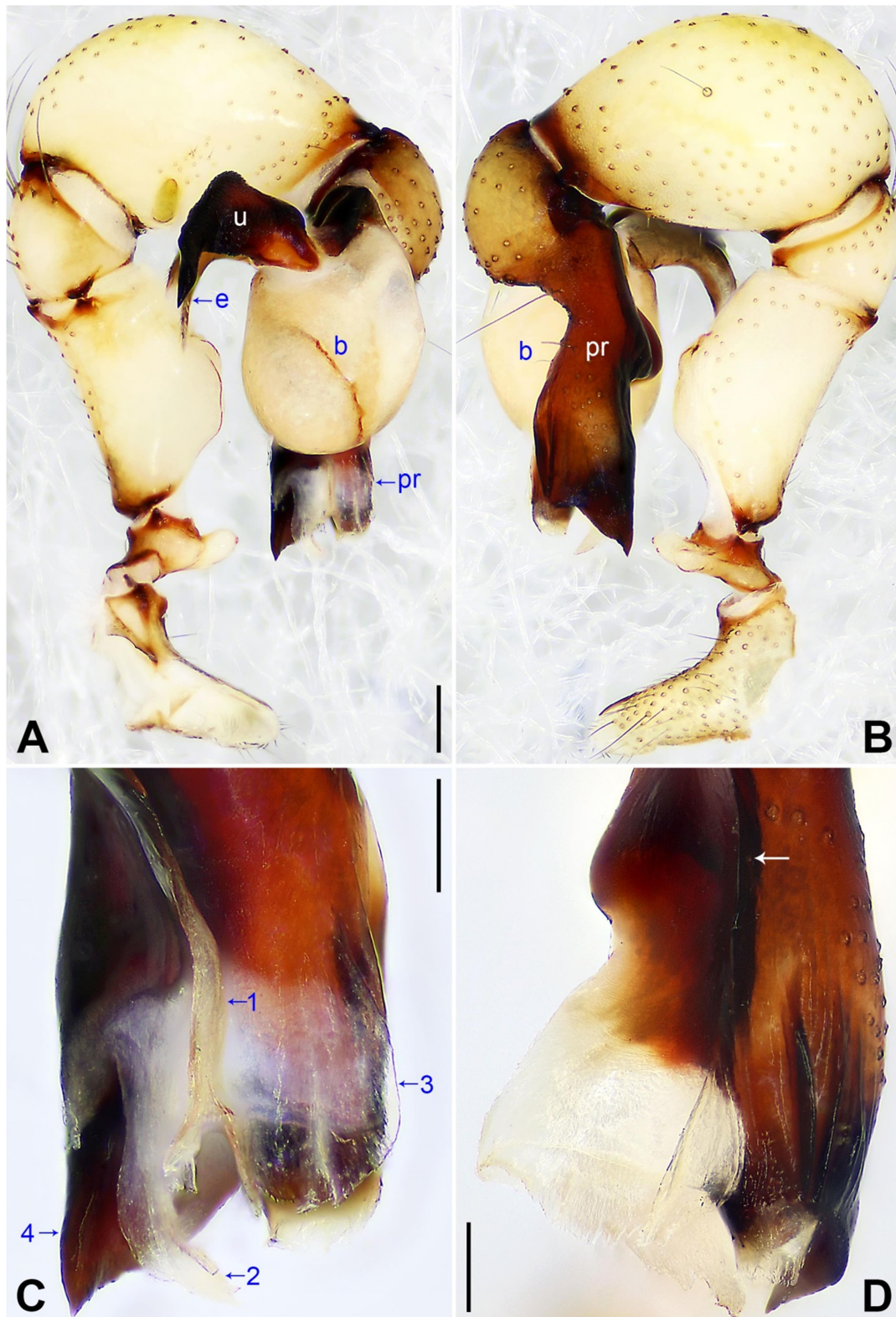
Supplementary Figure S21 *Pholcus jinniu* Tong & Li, 2010 A: Bulbal apophyses, prolateral view, arrow points at 'pseudo-appendix'; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at prolateral membranous process, arrow 2 points at spine-shaped prolateral apophysis, arrow 3 points at flat dorsal sclerite, arrow 4 points at dorsal spines; D: Dorsal view). b = bulb, e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



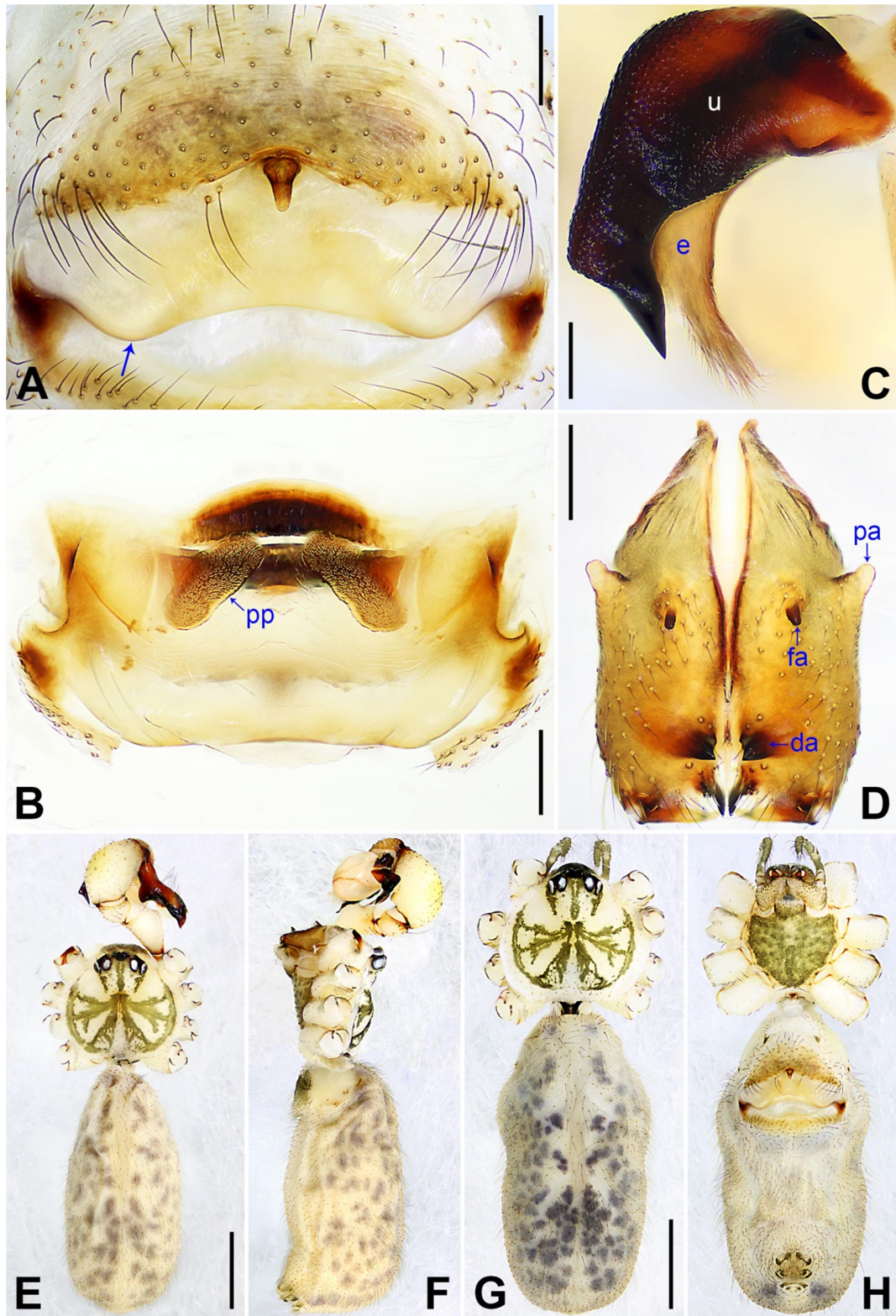
Supplementary Figure S22 *Pholcus kuaile* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view, arrow points at angular ventral sclerite); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at spine-shaped prolateral apophysis, arrow 2 points at prolateral membranous lamella, arrow 3 points at distal membranous process; D: Dorsal view, arrow points at dorsal spine). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



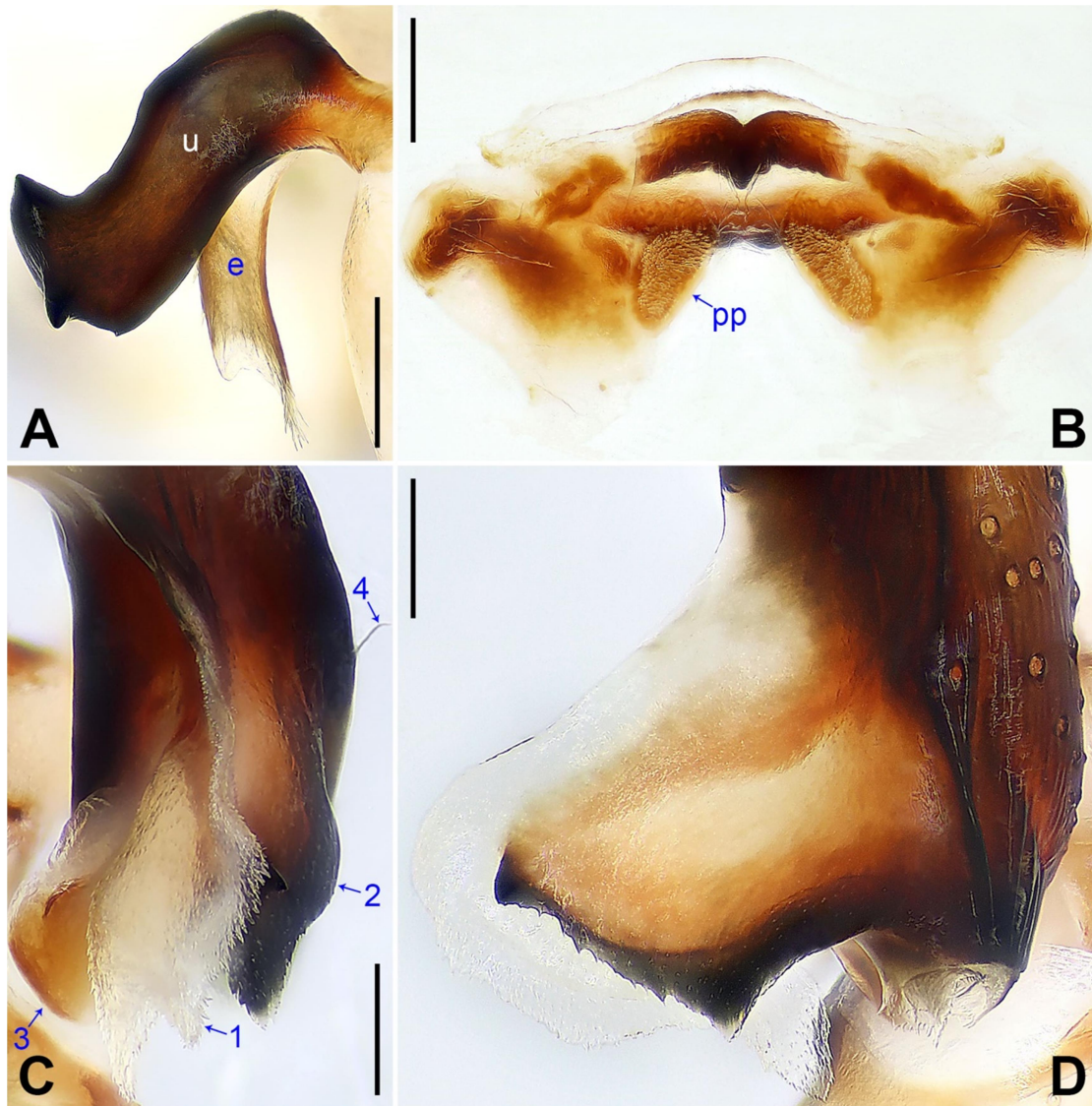
Supplementary Figure S23 *Pholcus kuaile* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrow points at ‘pseudo-appendix’; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). b = bulb, da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



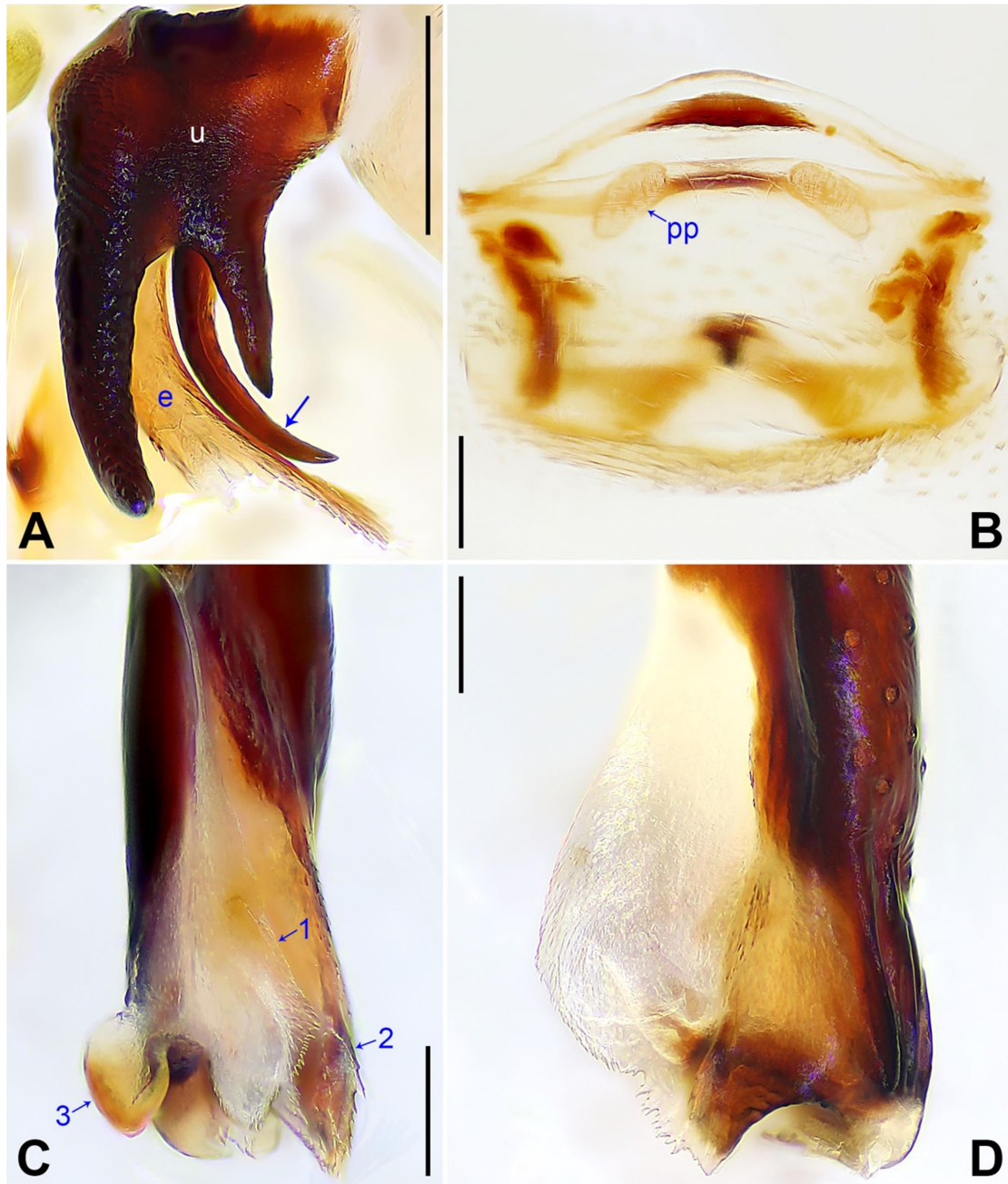
Supplementary Figure S24 *Pholcus luanping* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at prolateral membranous lamella, arrows 2, 3 point at prolateral membranous process and lamella, respectively, arrow 4 points at ventral sclerite; D: Dorsal view, arrow points at dorsal spine). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



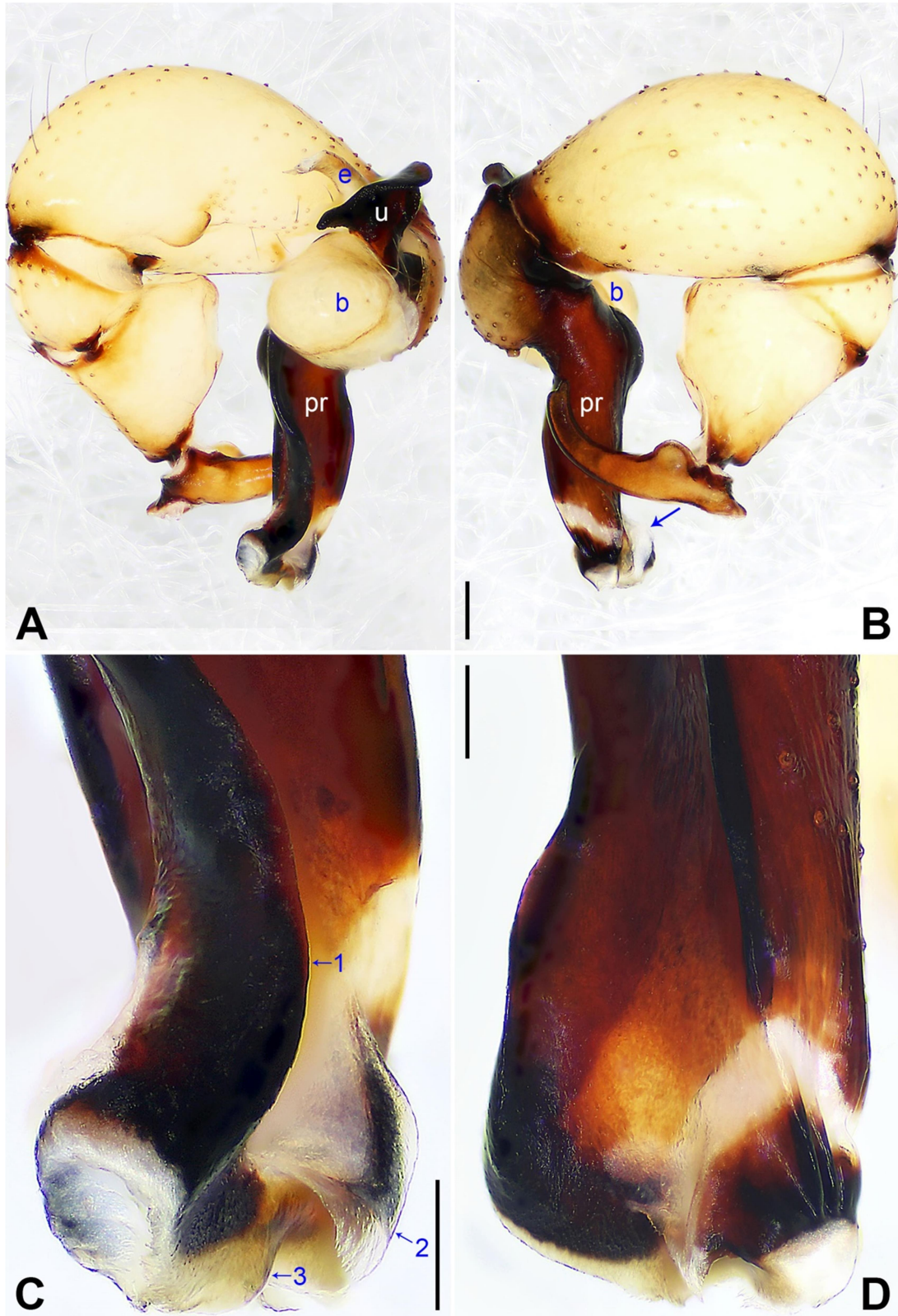
Supplementary Figure S25 *Pholcus luanping* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view, arrow points at lateral protrusion; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B, D), 0.10 (C), 1.00 (E–H).



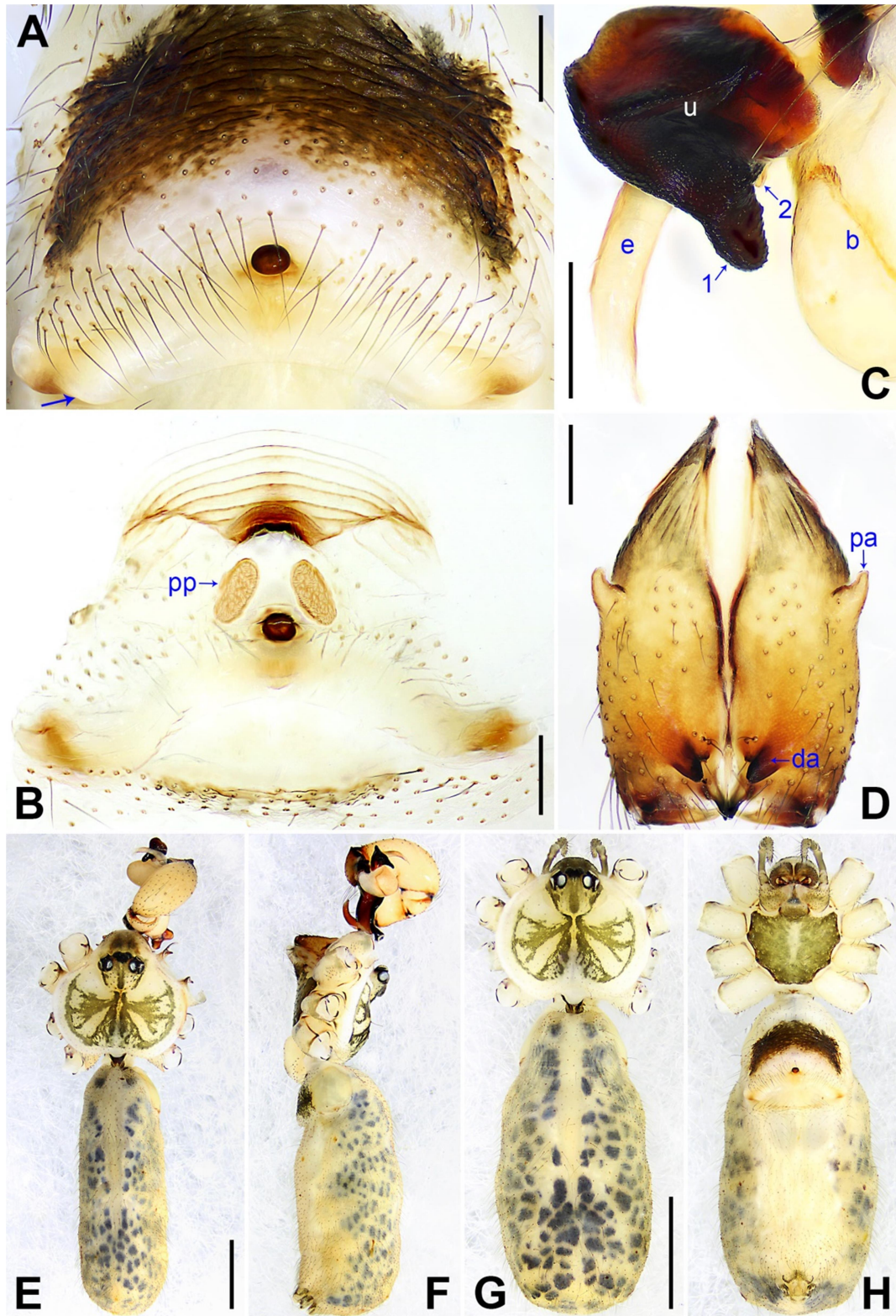
Supplementary Figure S26 *Pholcus luya* Peng & Zhang, 2013 A: Bulbal apophyses, prolateral view; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at prolateral membranous process, arrow 2 points at sclerotized dorsal apophysis, arrow 3 points at sclerotized ventral apophysis, arrow 4 points at dorsal spine; D: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



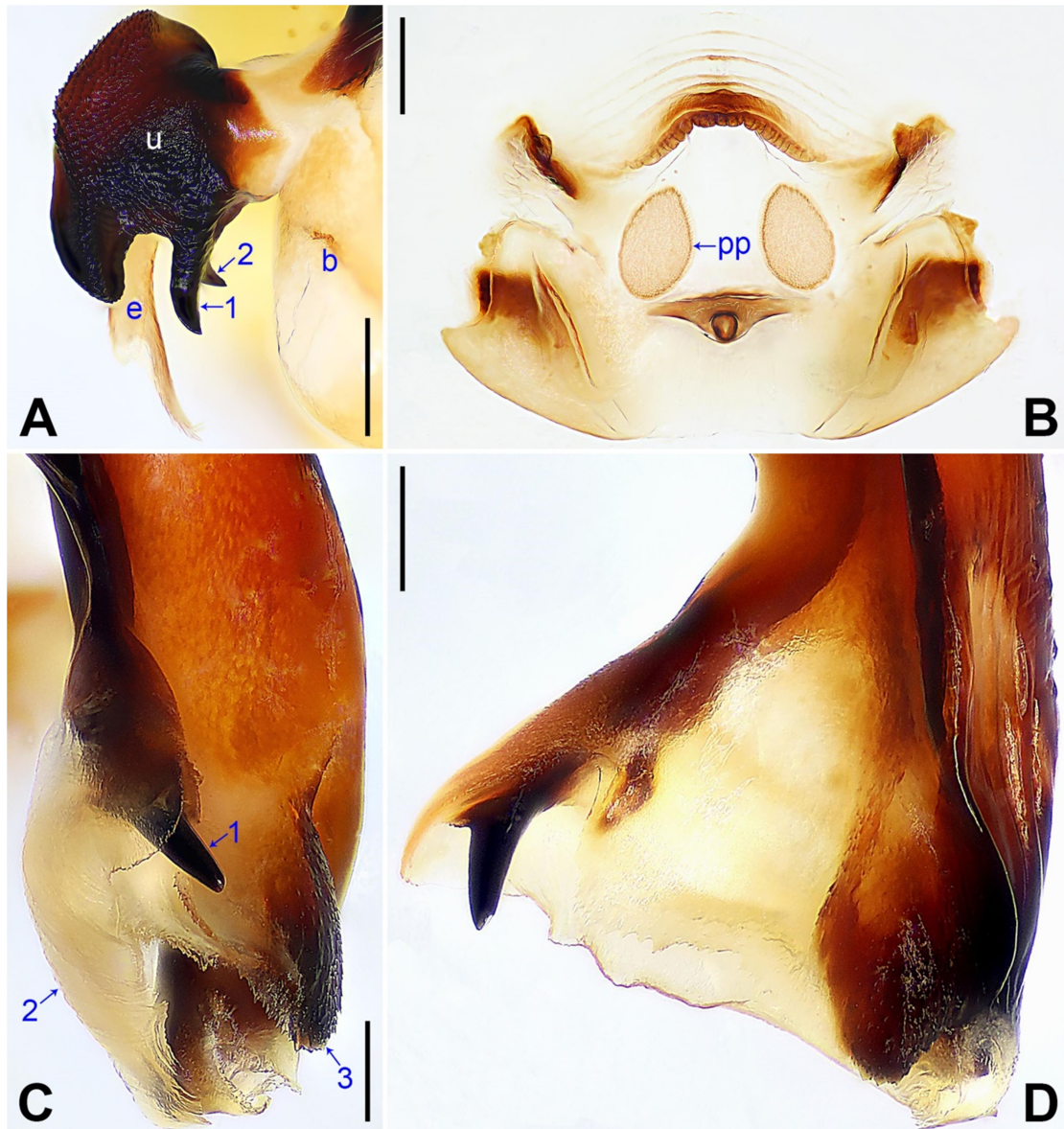
Supplementary Figure S27 *Pholcus papilionis* Peng & Zhang, 2011 A: Bulbal apophyses, prolateral view, arrow points at 'pseudo-appendix'; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at prolateral membranous process, arrow 2 points at sclerotized dorsal apophysis, arrow 3 points at sclerotized ventral apophysis; D: Dorsal view). e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



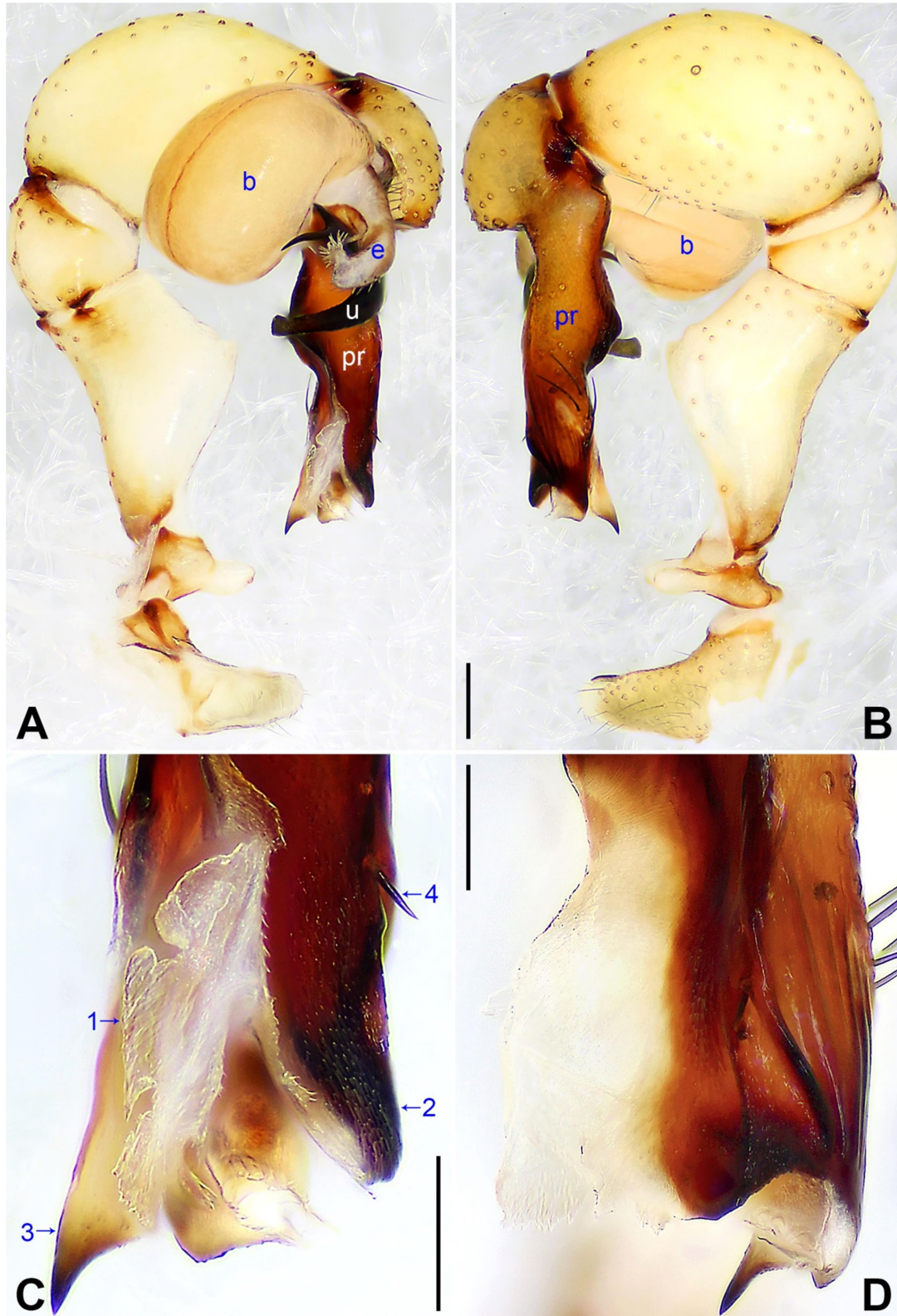
Supplementary Figure S28 *Pholcus tang* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view, arrow points at ventral membranous process); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at prolateral sclerite, arrow 2 points at sclerotized dorsal apophysis, arrow 3 points at distal apophysis; D: Dorsal view). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



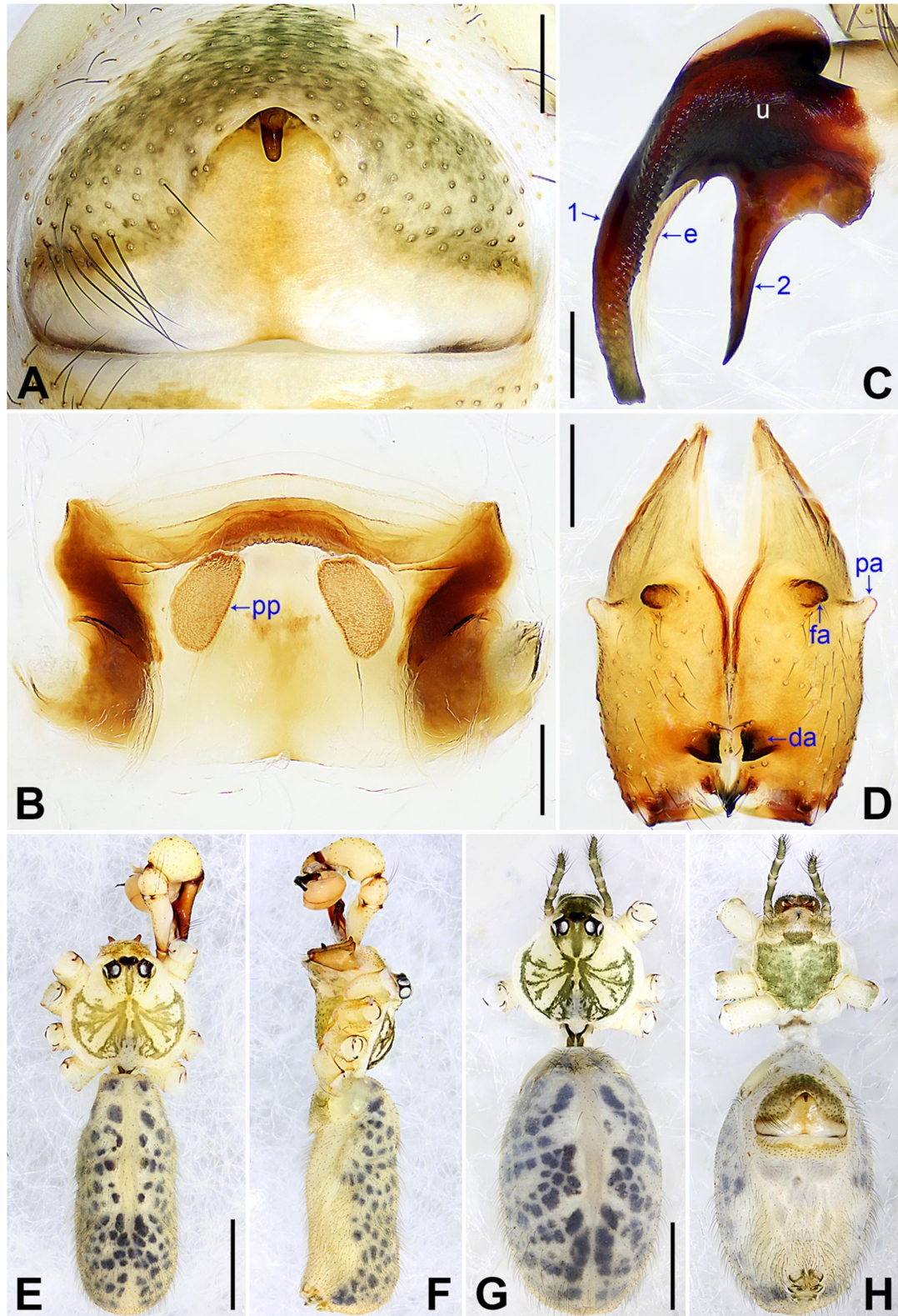
Supplementary Figure S29 *Pholcus tang* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view, arrow points at lateral protrusion; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrow 1 points at distal apophysis, arrow 2 points at ‘pseudo-appendix’; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). b = bulb, da = distal apophysis, e = embolus, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



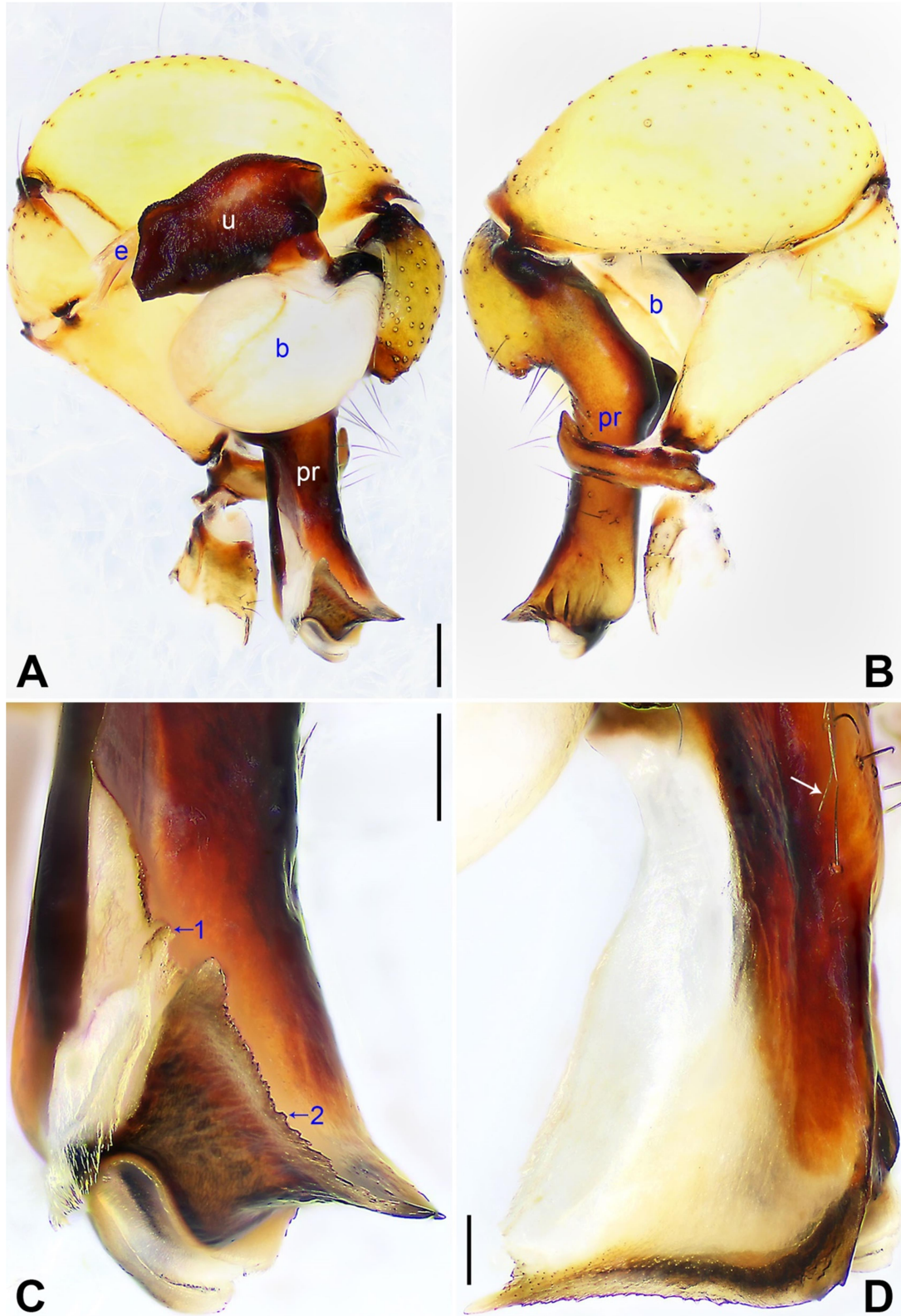
Supplementary Figure S30 *Pholcus wuling* Tong & Li, 2010 A: Bulbal apophyses, prolateral view, arrow 1 points at proximal apophysis, arrow 2 points at ‘pseudo-appendix’; B: Vulva, dorsal view; C, D: Distal part of procurus (C: Prolateral view, arrow 1 points at spine-shaped prolateral apophysis, arrow 2 points at prolateral membranous process, arrow 3 points at sclerotized dorsal apophysis; D: Dorsal view). b = bulb, e = embolus, pp = pore plate, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



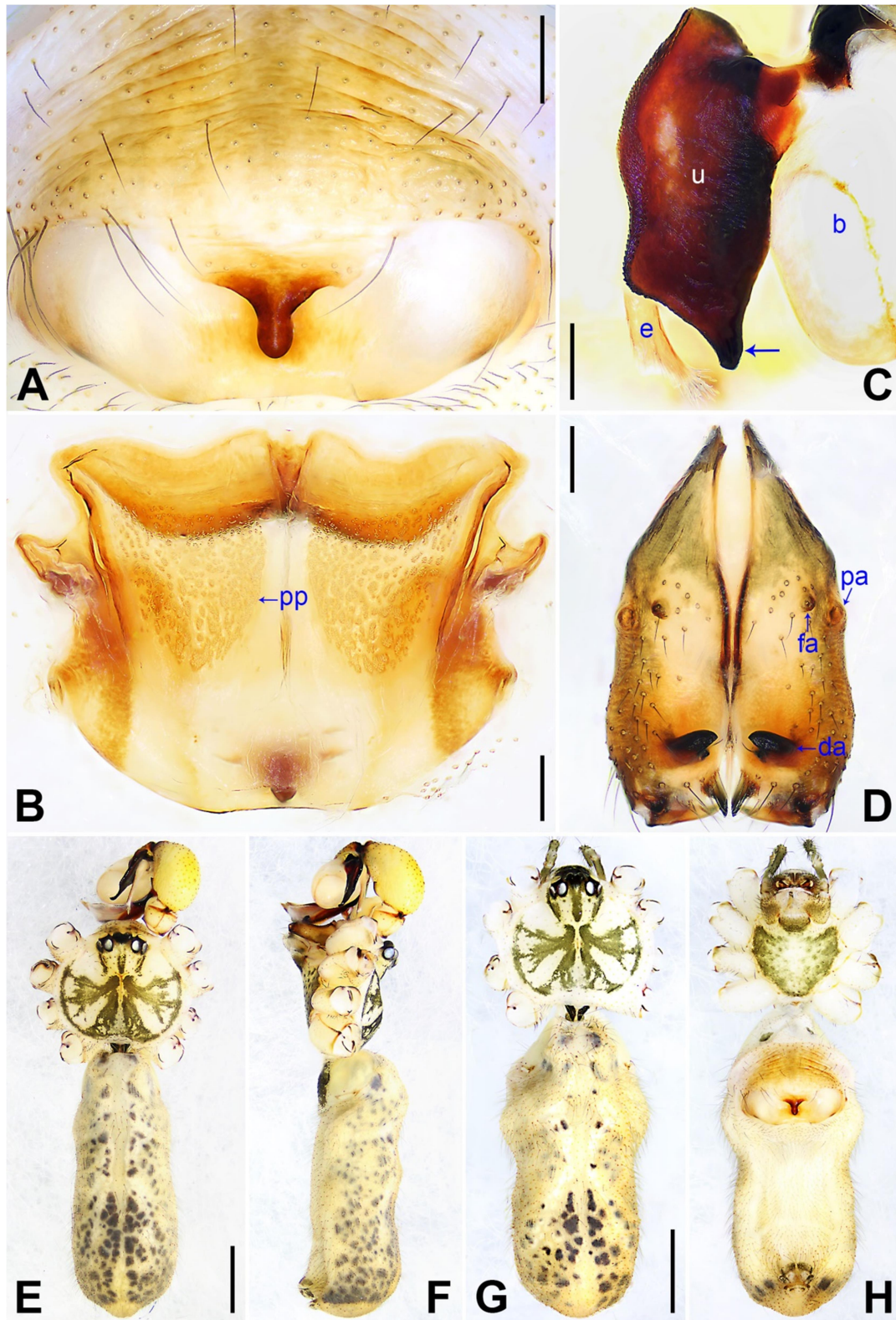
Supplementary Figure S31 *Pholcus xinglong* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at prolateral membranous lamella, arrow 2 points at sclerotized dorsal apophysis, arrow 3 points at ventral apophysis, arrow 4 points at dorsal spines; D: Dorsal view). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



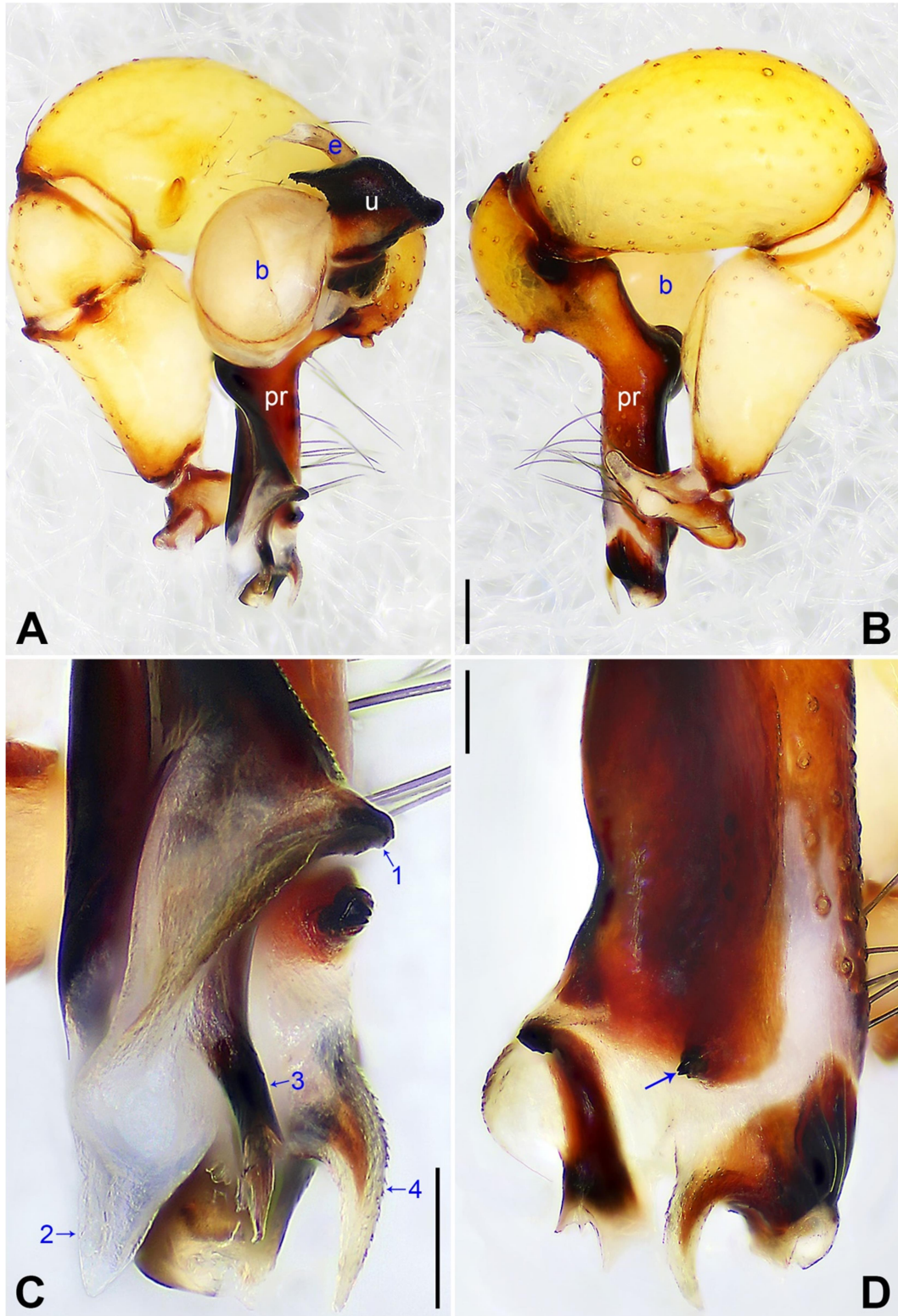
Supplementary Figure S32 *Pholcus xinglong* sp. nov., holotype (D–F) and paratype (C) males, paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view, arrows 1, 2 point at distal and proximal apophyses, respectively; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



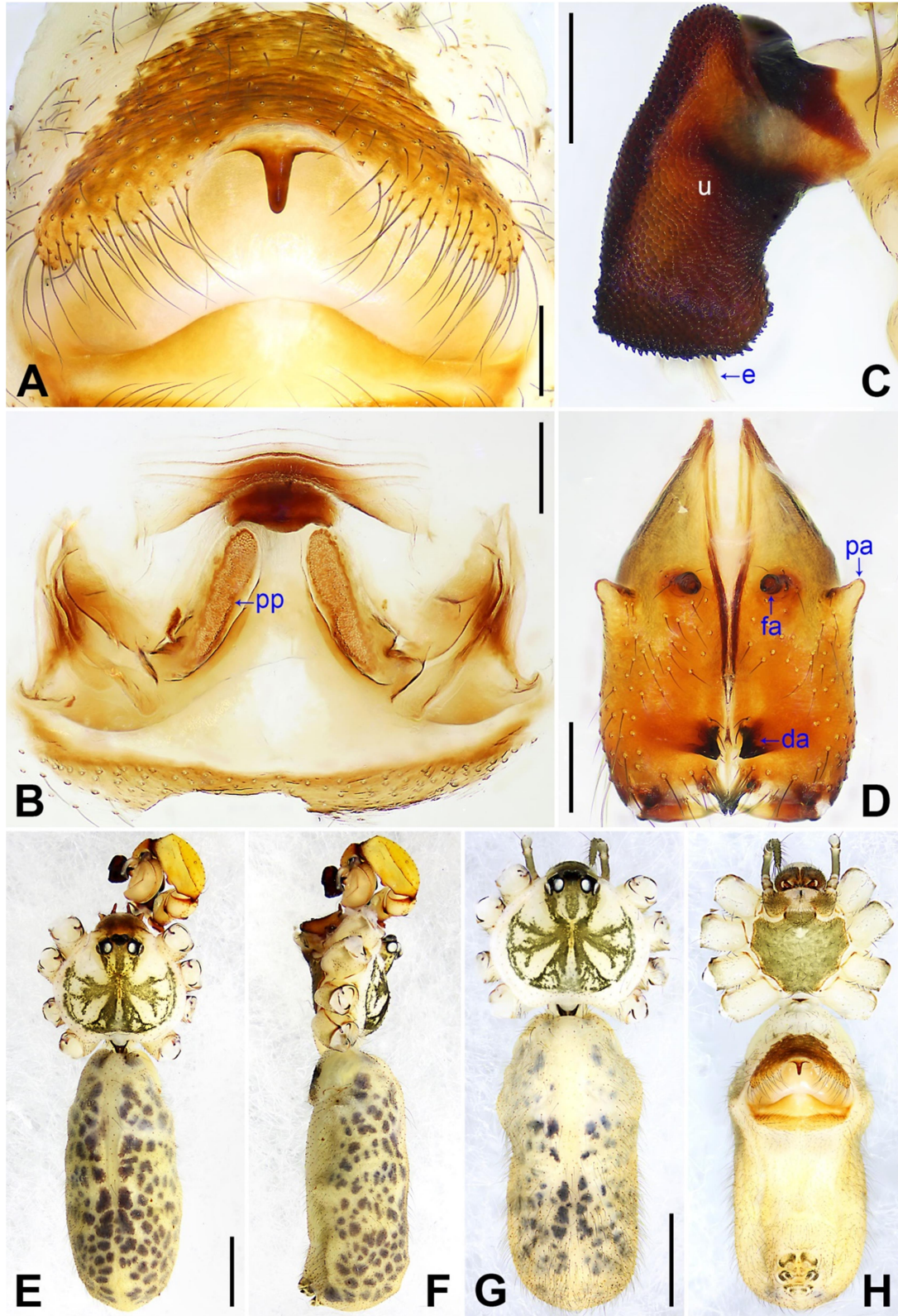
Supplementary Figure S33 *Pholcus xinzhou* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at prolateral membranous lamella, arrow 2 points at sclerotized dorsal apophysis; D: Dorsal view, arrow points at dorsal spines). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



Supplementary Figure S34 *Pholcus xinzhou* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Flipped right bulbal apophyses, prolateral view, arrow points at distal apophysis; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). b = bulb, da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).



Supplementary Figure S35 *Pholcus yanqing* sp. nov., holotype male A, B: Pedipalp (A: Prolateral view; B: Retrolateral view); C, D: Distal part of procursus (C: Prolateral view, arrow 1 points at angular prolateral apophysis, arrow 2 points at prolateral membranous process, arrow 3 points at prolateral apophysis, arrow 4 points at dorsal membranous process; D: Dorsal view, arrow points at dorsal spines). b = bulb, e = embolus, pr = procursus, u = uncus. Scale bars: 0.20 (A, B), 0.10 (C, D).



Supplementary Figure S36 *Pholcus yanqing* sp. nov., holotype male (C–F) and paratype female (A, B, G, H) A: Epigyne, ventral view; B: Vulva, dorsal view; C: Bulbal apophyses, prolateral view; D: Chelicerae, frontal view; E–H: Habitus (E, G: Dorsal view; F: Lateral view; H: Ventral view). da = distal apophysis, e = embolus, fa = frontal apophysis, pa = proximo-lateral apophysis, pp = pore plate, u = uncus. Scale bars: 0.20 (A–D), 1.00 (E–H).

Supplementary Table S1 Primers used for amplification and sequencing

Gene	Primer	F/R	Sequence 5'–3'	Reference
<i>COI</i>	LCO1490	F	GGTCAACAAATCATAAAGATATTGG	Folmer et al. (1994)
	HCO2198	R	TAAACTTCAGGGTGACCAAAAAATCA	
<i>H3</i>	H3af	F	ATGGCTCGTACCAAGCAGACVGC	Colgan et al. (1998)
	H3ar	R	ATATCCTTRGGCATRATRGTGAC	
<i>wnt</i>	Spwgf1	F	GYAAATGCCAYGGWATGTCMGG	Blackledge et al. (2009)
	Spwgr1	R	ACTTGRCAACACCARTGAAAWG	
	Wnt2f	F	CAGTGRAATGTRCARTTG	
	Wnt2r	R	CNGTTCAAACCTTGYTGGATG	

F/R: Forward/Reverse PCR primer.

Supplementary Table S2 Voucher specimen information

Species	Code	GenBank number			Locality
		<i>COI</i>	<i>H3</i>	<i>wnt</i>	
<i>P. luya</i>	W123	ON380826	ON375172	ON375262	near Luyashan Scenic Spot (38°49.61'N, 112°5.51'E), Dongzhai Town, Ningwu County, Xinzhou, Shanxi, China
	W124	ON380827	ON375173	ON375263	
	W125	ON380828	ON375174	ON375264	
<i>P. clavimaculatus</i>	W096	ON380799	ON375145	ON375235	Jinhekou Scenic Spot (39°56.56'N, 114°56.85'E), Xiaowutaishan Mountain, Yu County, Zhangjiakou, Hebei, China
	W097	ON380800	ON375146	ON375236	
	W098	ON380801	ON375147	ON375237	
<i>P. wangxidong</i>	W102	ON380805	ON375151	ON375241	Wangxidong Cave (39°37.40'N, 114°46.88'E), Wangxidong Village, Yu County, Zhangjiakou, Hebei, China
	W103	ON380806	ON375152	ON375242	
	W104	ON380807	ON375153	ON375243	
<i>P. datong</i> sp. nov.	W135	ON380838	ON375184	ON375274	roadside of Jinshen Road (39°23.36'N, 114°17.45'E), Diaowang Village, Shangzhai Town, Lingqiu County, Datong, Shanxi, China
	W136	ON380839	ON375185	ON375275	
	W137	ON380840	ON375186	ON375276	
<i>P. guangling</i> sp. nov.	W132	ON380835	ON375181	ON375271	Muchang Village (39°52.43'N, 113°58.36'E), Liangzhuang Town, Guangling County, Datong, Shanxi, China
	W133	ON380836	ON375182	ON375272	
	W134	ON380837	ON375183	ON375273	
<i>P. beijingensis</i>	y098	ON380854	ON375200	ON375290	Shenxiandong Cave (39°52.00'N, 115°41.90'E), Jinjitai, Shijiaying Town, Beijing, China
	y099	ON380855	ON375201	ON375291	Bianfudong Cave (39°43.71'N, 115°45.08'E), Sihe Village, Xiayunling Town, Fangshan District, Beijing, China
	y100	ON380856	ON375202	ON375292	Yunshuidong Cave (39°39.99'N, 115°48.44'E), Shangfangshan National Forest Park, Fangshan District, Beijing, China
<i>P. tang</i> sp. nov.	W099	ON380802	ON375148	ON375238	roadside of S241 (39°5.66'N, 114°43.58'E), Shibei Village, Xinghua Street, Tang County, Baoding, Hebei, China
	W100	ON380803	ON375149	ON375239	
	W101	ON380804	ON375150	ON375240	
<i>P. chengde</i> sp. nov.	W060	ON380769	ON375115	ON375205	roadside of S358 (40°36.98'N, 117°57.20'E), Dayingzi Town, Xinglong County, Chengde, Hebei, China
	W061	ON380770	ON375116	ON375206	

	W062	ON380771	ON375117	ON375207	
<i>P. triangulatus</i>	W105	ON380808	ON375154	ON375244	roadside of Xiayin Road (39°13.46'N, 114°44.28'E), near Baishishan Scenic Spot,
	W106	ON380809	ON375155	ON375245	Laiyuan Town, Baoding, Hebei, China
	W107	ON380810	ON375156	ON375246	
<i>P. zhuolu</i>	W144	ON380847	ON375193	ON375283	Yangjiaping Natural Reserve (39°58.58'N, 115°23.75'E), Zhuolu County,
	W145	ON380848	ON375194	ON375284	Zhangjiakou, Hebei, China
	W146	ON380849	ON375195	ON375285	
<i>P. xinzhou</i> sp. nov.	W126	ON380829	ON375175	ON375265	roadside of Gaosu Road (38°59.80'N, 112°58.45'E), Xingao Town, Dai County,
	W127	ON380830	ON375176	ON375266	Xinzhou, Shanxi, China
	W128	ON380831	ON375177	ON375267	
<i>P. papilionis</i>	W117	ON380820	ON375166	ON375256	Zhulong Temple (38°7.23'N, 113°17.50'E), Zhulongshan Mountain, Yu County,
	W118	ON380821	ON375167	ON375257	Yangquan, Shanxi, China
	W119	ON380822	ON375168	ON375258	
<i>P. changchi</i> sp. nov.	W120	ON380823	ON375169	ON375259	Cangshan Scenic Spot (38°13.30'N, 113°20.65'E), Cangshan Village, Changchi Town,
	W121	ON380824	ON375170	ON375260	Yu County, Yangquan, Shanxi, China
	W122	ON380825	ON375171	ON375261	
<i>P. pennatus</i>	W114	ON380817	ON375163	ON375253	near Cangyanshan Scenic Spot (37°50.05'N, 114°8.21'E), Cangyanshan Town,
	W115	ON380818	ON375164	ON375254	Jingxing County, Shijiazhuang, Hebei, China
	W116	ON380819	ON375165	ON375255	
<i>P. hunyuan</i> sp. nov.	W129	ON380832	ON375178	ON375268	roadside of G239 (39°34.95'N, 113°47.71'E), Xiangyang Village, Linchang Town,
	W130	ON380833	ON375179	ON375269	Hunyuan County, Datong, Shanxi, China
	W131	ON380834	ON375180	ON375270	
<i>P. curvus</i>	W111	ON380814	ON375160	ON375250	near Heiyagou Bridge (38°57.41'N, 113°47.63'E), Heiyagou Village, Longquanguan
	W112	ON380815	ON375161	ON375251	Town, Fuping County, Baoding, Hebei, China
	W113	ON380816	ON375162	ON375252	
<i>P. alloctospilus</i>	W108	ON380811	ON375157	ON375247	Liaodaobei Village (38°54.02'N, 113°50.58'E), Longquanguan Town, Fuping County,
	W109	ON380812	ON375158	ON375248	Baoding, Hebei, China
	W110	ON380813	ON375159	ON375249	
<i>P. brevis</i>	W141	ON380844	ON375190	ON375280	roadside of Pingcheng Road (40°15.28'N, 117°7.35'E), Weijiawan Village, Weijiawan

	W142	ON380845	ON375191	ON375281	Town, Pinggu District, Beijing, China
	W143	ON380846	ON375192	ON375282	
<i>P. jinniu</i>	W063	ON380772	ON375118	ON375208	roadside of Wuling Road (40°29.65'N, 117°29.71'E), Taojiatai Village, Wulingshan
	W064	ON380773	ON375119	ON375209	Town, Xinglong County, Chengde, Hebei, China
	W065	ON380774	ON375120	ON375210	
<i>P. wuling</i>	W066	ON380775	ON375121	ON375211	near Wulingshan Scenic Spot (40°32.85'N, 117°29.68'E), Wulingshan Town,
	W067	ON380776	ON375122	ON375212	Xinglong County, Chengde, Hebei, China
	W068	ON380777	ON375123	ON375213	
<i>P. chicheng</i>	W090	ON380793	ON375139	ON375229	Shijia Village (40°36.70'N, 115°43.80'E), Dahaituo Town, Chicheng County,
	W091	ON380794	ON375140	ON375230	Zhangjiakou, Hebei, China
	W092	ON380795	ON375141	ON375231	
<i>P. huailai</i> sp. nov.	W093	ON380796	ON375142	ON375232	roadside of Y138 (40°29.15'N, 115°26.96'E), Pandaodi Village, Xinbaoan Town,
	W094	ON380797	ON375143	ON375233	Huailai County, Zhangjiakou, Hebei, China
	W095	ON380798	ON375144	ON375234	
<i>P. babao</i>	W081	ON380784	ON375130	ON375220	Baiyungudong Scenic Spot (41°2.35'N, 116°54.93'E), Heishan Village, Heishanzui
	W082	ON380785	ON375131	ON375221	Town, Fengning County, Chengde, Hebei, China
	W083	ON380786	ON375132	ON375222	
<i>P. luanping</i> sp. nov.	W075	ON380778	ON375124	ON375214	Luanyang Road and Daguang Highway (40°49.70'N, 117°22.63'E), junction of
	W076	ON380779	ON375125	ON375215	Jingshen Road, Changshanyu Town, Luanping County, Chengde, Hebei, China
	W077	ON380780	ON375126	ON375216	
<i>P. datan</i>	W084	ON380787	ON375133	ON375223	roadside of Banhu Road (41°22.28'N, 116°28.65'E), near Fozhudong Scenic Spot,
	W085	ON380788	ON375134	ON375224	Datan Town, Fengning County, Chengde, Hebei, China
	W086	ON380789	ON375135	ON375225	
<i>P. fengning</i> sp. nov.	W087	ON380790	ON375136	ON375226	Xingfu Village (41°17.50'N, 116°22.90'E), Shiqidaogou, Wudaoying Town, Fengning
	W088	ON380791	ON375137	ON375227	County, Chengde, Hebei, China
	W089	ON380792	ON375138	ON375228	
<i>P. yanqing</i> sp. nov.	W138	ON380841	ON375187	ON375277	roadside of Liugan Road (40°35.58'N, 116°14.11'E), Chahugou Bridge, Liubinpu
	W139	ON380842	ON375188	ON375278	Town, Yanqing District, Beijing, China
	W140	ON380843	ON375189	ON375279	

<i>P. kuaile</i> sp. nov.	W078	ON380781	ON375127	ON375217	Wudaohe Village (40°52.80'N, 117°5.11'E), Kuaile Street, Luanping County, Chengde, Hebei, China
	W079	ON380782	ON375128	ON375218	
	W080	ON380783	ON375129	ON375219	
<i>P. tongyaoi</i>	W147	ON380850	ON375196	ON375286	Pool and Valley Natural Park (40°32.60'N, 116°40.68'E), Huairou District, Beijing, China
	W148	ON380851	ON375197	ON375287	
	W149	ON380852	ON375198	ON375288	
<i>P. lexuancanhi</i>	y095	ON380853	ON375199	ON375289	Beijing Botanical Garden (40°00.00'N, 116°12.00'E), Haidian District, Beijing, China
<i>P. paralinzhou</i>	y046	MW721825	ON375203	ON375294	Yuntaishan Scenic Spot, Xiuwu County, Jiaozuo, Henan, China
<i>P. taishan</i>	y133	MW721826	ON375204	ON375293	Taishan Mountain, Taian, Shandong, China