

Pholcus kimi Song & Zhu, 1994

Song, D., Zhu, M. 1994. On some species of cave arachnids of China. In: Collected Papers on Zoology in Celebration of the Sixtieth Anniversary of the Founding of the Zoological Society of China and in Honor of the Centenary of the Birth of Professor Zhen Chen. Zool. Soc. China, pp 36-46.

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2. 金氏幽灵蛛 *Pholcus kimi* sp. nov. (图 2)

正模♂, 副模1♂, 云南河口硝洞, 1992年4月8日。

雄蛛长5.87—6.12。头胸部长1.75, 宽1.58; 腹部长4.37, 宽1.51。背甲淡黄色, 中部有一对分叉的淡褐色斑纹。前眼列平直, 后眼列微前凹。前中眼最小, 互相靠近。前侧眼、后侧眼和后中眼聚生在一个突起上。前侧眼>后侧眼=后中眼>前中眼(0.25:0.23:0.23:0.12)。两后中眼间距0.32。螯肢前、后齿堤各1齿, 前面中部靠外侧有两个突起如图示。额向前下方倾斜, 高0.78。胸板两侧淡黄色, 中部为一个大的倒三角形黑褐色斑。步足黄褐色, 各节有排成纵列沿全节分布的数列细毛。步足测量:I?(8.16, 8.52, 6.80, ?); II 22.49(6.30, 5.81, 9.02, 1.36); III 16.13(4.76, 4.20, 6.18, 0.99); IV 22.62(6.68, 5.81, 8.65, 1.48)。足式:1, 4, 2, 3。腹部背面灰褐色, 沿中线两侧有不规则的黑斑, 但左右斑纹大体对称; 腹面淡黄色, 无任何斑纹。

本种与太白幽灵蛛 *Pholcus taibaiensis* Wang et Zhu(王新平、朱明生, 1992: 20—21, 图1—6)和武夷幽灵蛛 *Pholcus wuyiensis* Zhu et Gong, sp. nov. (待发表)近似, 但在螯肢前面中部的突起及触肢的结构有明显差别, 故为一新种。

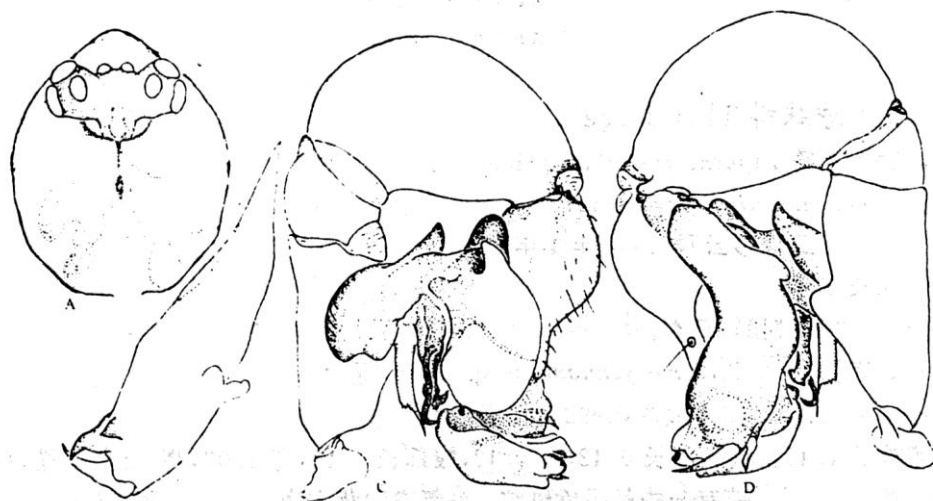


图2 金氏幽灵蛛 *Pholcus kimi* sp. nov.

A. 雌蛛头胸部, B. 左螯肢

C. 左触脚内倒观, D. 同上, 外侧观

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本种种名系以韩国金宵弼(Joo Pil Kim)博士的姓命名, 以示敬意。

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2. *Pholcus kimi* sp. nov. (fig. 2)

Holotype♂, paratype 1♂, Xiao Dong, Hekou, Yunnan, April 8, 1992.

Length of males 5.87—6.12. Cephalothorax 1.75 long, 1.58 wide; abdomen 4.37 long, 1.51 wide.

The new species is somewhat allied to *Ph. taibaiensis*, but can be distinguished

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from the latter by the structures of palp and ohelicera.

Song, D., Zhu, M., and Chen, J. 1999. The Spiders of China. Hebei Science and Technology Publishing House. 640 pp., 4 plates.

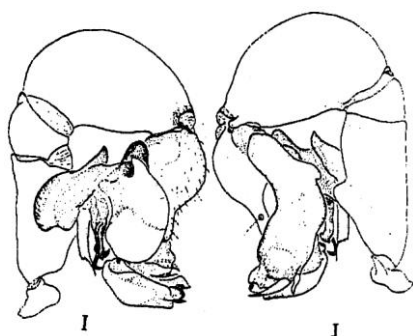
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Pholcus kimi Song et Zhu, 1994 (fig. 24I—J)

Pholcus kimi Song & Zhu, 1994: 37, f. 2.

Distribution: Yunnan (Hekou).

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Zhang, F., Zhu, M.S., Song, D.X. 2004. New discovery of the female spider of *Pholcus kimi* (Araneae: Pholcidae). J. agricult. Univ. Hebei 27(5): 77-78.

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金氏幽灵蛛 *Pholcus kimi* Song et Zhu, 1994 雌性新发现 (图 1)

Pholcus kimi Song & Zhu, 1994: 37, f. 2A - D; Song, Zhu & Chen, 1999: 58, f. 24I - J.

雄蛛体长 5.67~6.12。一雄蛛体长 6.12:头胸部长 1.60,宽 1.68;腹部长 4.52,宽 1.26。背甲淡黄色,中线两侧各有 1 分叉的棕色蝶翅状斑。头区后方的背甲中央还有 1 棒状斑。头部隆起。8 眼分为 3 组,前中眼为 1 组,其余每侧的 3 眼各为 1 组并位于稍微抬起的突起上,前中眼后的头区中央具 1 棕色棒状斑,头区后部为淡色区,内有对称的 2 对棕色斑点。额高 0.75,微向前倾斜,其上有 1 棕色斑。从背面观察,两眼列均为后凹,各眼基均具黑色环。前中眼间距小于前中、侧眼间距(0.08 0.12);后中眼间距大于后中、侧眼间距(0.35 0.07);中眼域后边大于前边(0.65 0.26),长小于宽(0.34 0.65)。前中眼 < 后中眼 < 后侧眼 < 前侧眼(0.09 0.19 0.20 0.21)。螯肢黄褐色,前、后齿堤各有 1 齿,螯肢前面近中央位置有 2 个突起,外侧一个较大,尖端指向外上方;内侧一个较小。颚叶橘黄色,呈八字形。下唇浅黄褐色。胸板近黑色,无斑。步足极细长,黄褐色。步足测量: I 47.70 (11.25 + 12.15 + 21.60 + 2.70); II 32.25 (8.37 + 8.50 + 14.04 + 1.44); III 22.71 (6.50 + 6.08 + 9.00 + 1.13); IV 31.19 (9.00 + 7.88 + 12.69 + 1.62)。足式: 1423。腹部长圆

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筒形,淡黄白色,背面具对称的不规则灰褐色斑点,腹面黄白色,生殖器部位褐色,无斑纹。纺器黄褐色。触肢的转节距较长;腿节具1腹突;胫节上具有2根听毛;跗舟呈葫芦状,端部变细,跗节器清晰可见;跗前突呈肘形,端部复杂。触肢器的生殖球大;钩状突大而较长,边缘密布小脊;附突端部分成两叉,均为钩状,插入器位于钩状突和附突之间,末端尖细。

雌蛛体长 6.23~7.16。一雌蛛体长 7.16;头胸部长 1.31,宽 1.58;腹部长 5.85,宽 2.07。额高 0.42,微向前倾斜,其上有1棕色斑。前中眼间距小于前中、侧眼间距(0.05:0.09);后中眼间距大于后中、侧眼间距(0.22:0.05);中眼域后边大于前边(0.52:0.22),长小于宽(0.26:0.52)。前中眼<后中眼<后侧眼=前侧眼

(0.10:0.19:0.21:0.21)。步足测量:I 28.41(9.63+7.02+10.26+1.50);II 25.53(6.75+7.02+10.26+1.50);III 8.63(5.58+4.95+7.05+1.05);IV 26.24(8.01+6.75+9.95+1.53)。足式:1423。其余特征似雄蛛。外雌器约呈三角形,两侧各具1乳房状突起,顶部具1球形把手状突起;背面观中部两侧各有1有孔的板,上部有拱桥状的深色横带。

检视标本:1 ♀♀,贵州安顺黄果树瀑布(25.9°N,105.6°E),2000-08-15,张俊霞采;1 ♂,湖南郴州(25.7°N,113.0°E)五盖山林场,2002-05-19,张志升、杨晋宇采;1 ♀1 ♂,湖北巴东县巴山森林公园,2003-08-20,张俊霞采;2 ♀1 ♂,四川泸州合江县自怀镇乾坤山庄,2003-17-30,张俊霞采;3 ♀,四川峨眉山伏虎寺和报国寺附近,2003-07-27,张俊霞采。

地理分布:云南、贵州、湖南、四川、湖北。

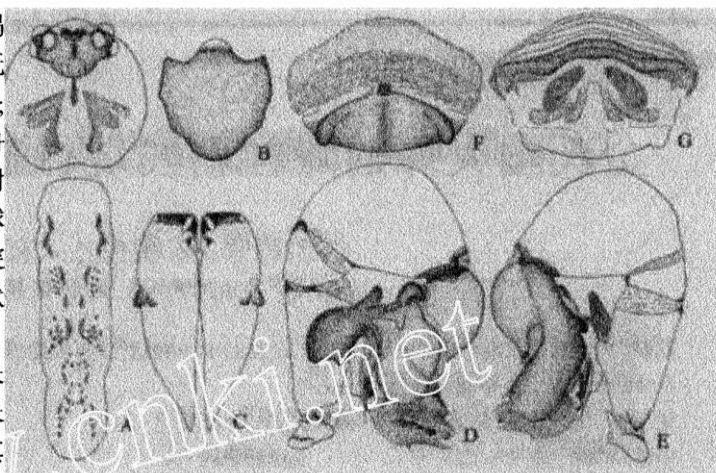


图1 金氏幽灵蛛

Fig.1 *Pholcus kimi* Song et Zhu

A. 雄蛛背面观; B. 雄蛛胸板; C. 雄蛛螯肢; D. 雄蛛左触肢器内侧面观; E. 同上,外侧面观; F. 外雌器外面观; G. 同上,内面观

Zhang, F., Zhu, M.S. 2009. A review of the genus *Pholcus* (Araneae: Pholcidae) from China. Zootaxa 2037: 1-114.

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Pholcus kimi Song & Zhu, 1994
(Figs. 21-22)

Pholcus kimi Song & Zhu 1994: 37, f. 2A-D. Song, Zhu & Chen, 1999: 58, f. 24I-J. Zhang, Zhu & Song, 2004: 77, f. 1A-G.

Diagnosis. Very similar to *P. bidentatus*, but can be distinguished from it by the shape of the tip of the procurus (Figs. 21F-G) and by the appendix without two thorn-shaped apophyses centrally (Fig. 21F).

Redescription. Male: A specimen measured (Huangguoshu Waterfall), total length 6.1: cephalothorax 1.6 long, 1.7 wide; abdomen 4.5 long, 1.3 wide. Leg I: 47.7 (12.3+0.7+11.5+21.6+2.7), tibia II: 7.9, tibia III: 5.6, tibia IV: 7.2; tibia I L/D: 76. Prosoma shape as in Fig 21D. Carapace short, broad and almost circular, ochre, with pair of brown butterfly-shaped mark broadly connecting to ocular area. Cephalic region raised, with brown stripe centrally and two pairs of brown dots posteriorly, ocular area dark yellow. Clypeus 0.75, slightly ochre, with brown marks. Distance AME-AME 0.08. Diameter AME 0.09, ALE 0.21, PME 0.19, PLE 0.20. Chelicerae as in Fig. 21C, with pair of black serrated apophyses distally and two pairs of unsclerotized round apophyses proximolaterally. Labium light yellow. Endites yellow. Sternum almost dark ochre, without markings as in Fig. 21E. Femora, patellae and tibiae brown, with dark rings, metatarsi and tarsi brown. Tarsus

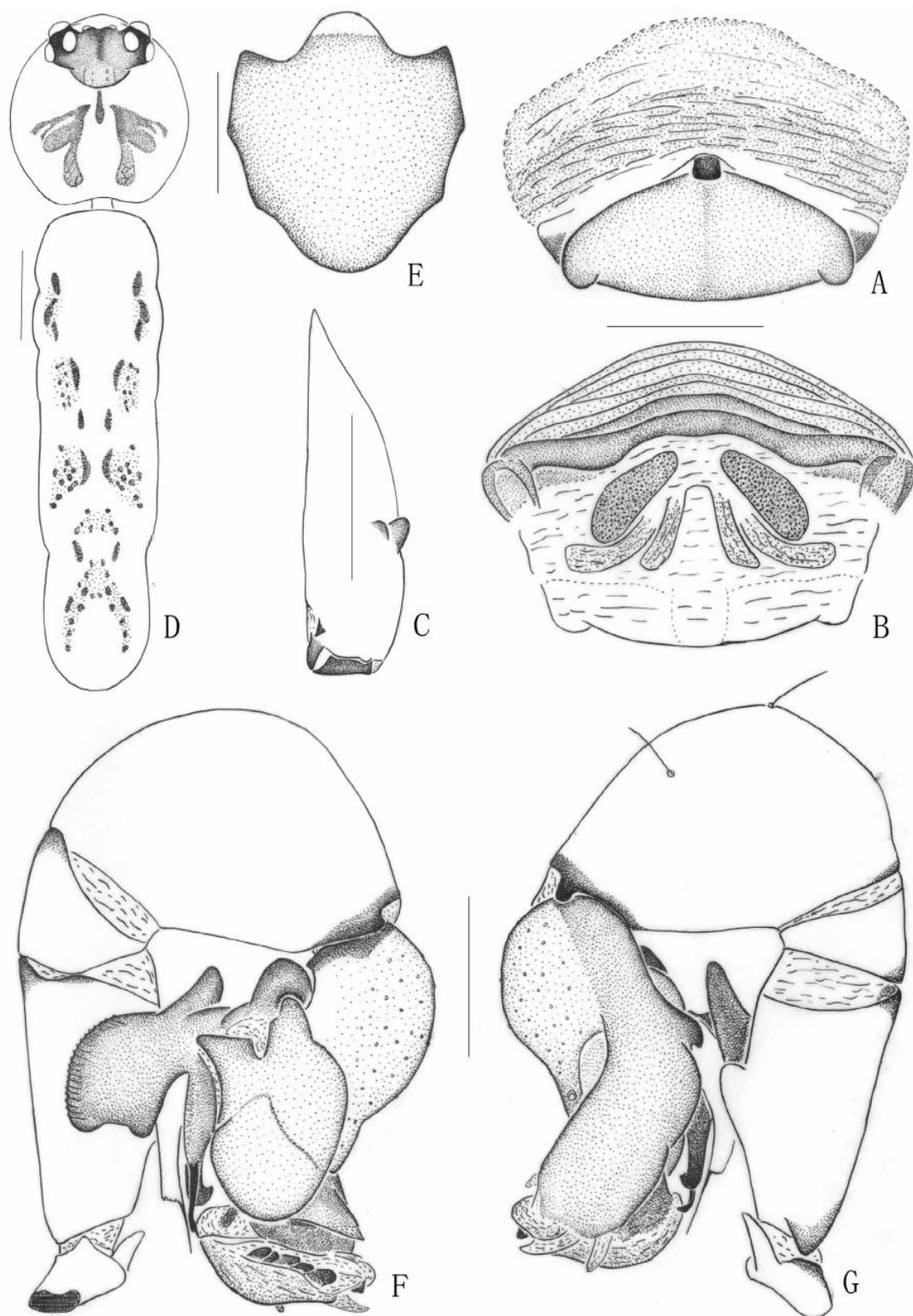


FIGURE 21. *Pholcus kimi* Song & Zhu, 1994 (illustrations modified from Zhang *et al.* 2005). A. epigynum, ventral view. B. same, dorsal view. C. male left chelicera, frontal view. D. male body, dorsal view. E. male sternum, ventral view. F. left palp, prolateral view. G. same, retrolateral view. Scale lines: 1.0mm (D), 0.5mm (A–C, E–G).

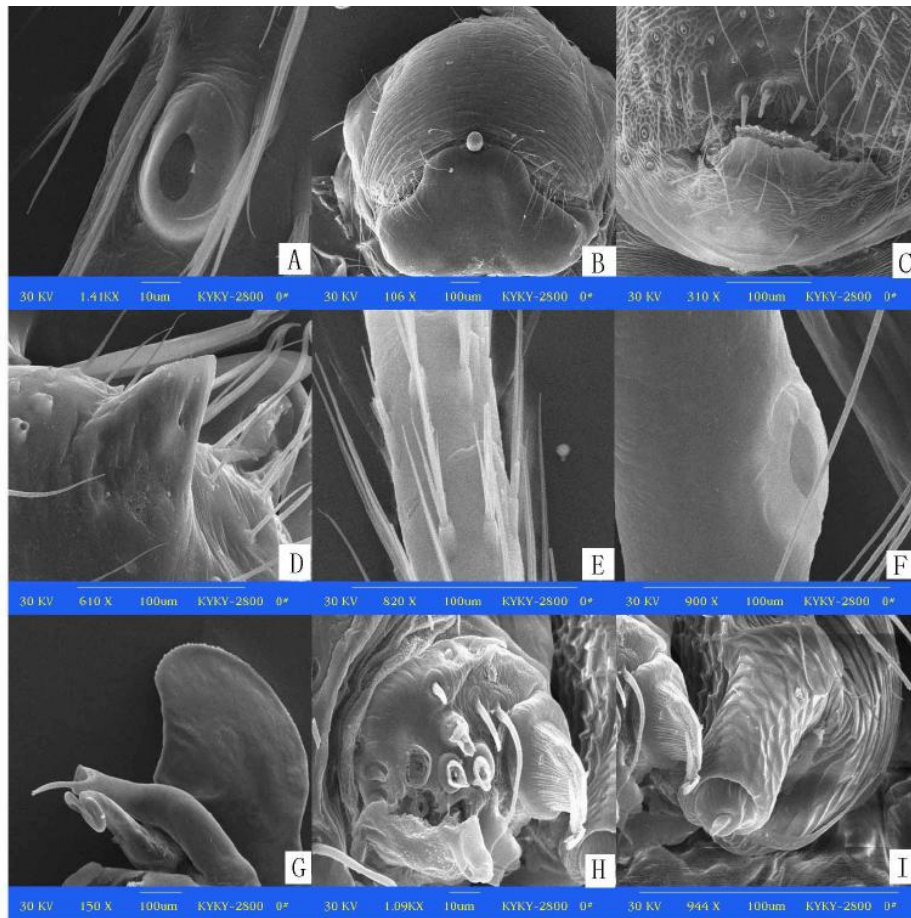


FIGURE 22. *Pholcus kimi* Song & Zhu, 1994. A. tarsal organ on female tarsus 1. B. epigynum, ventral view. C. male gonopore, showing four epiandrous spigots. D. tip of male distal cheliceral apophysis. E. pseudosegmentation on male tarsus 1. F. male palpal tarsal organ. G. uncus, embolus and appendix of bulb. H. male ALS, with several piriform gland spigots. I. male PMS, with two spigots.

with several pseudosegmentations as in Fig. 22E. Abdomen cylindrical, pale ochre, dorsum with numerous brown spots as in Fig. 21D. Venter pale brown, without marks. Male gonopore with four epiandrous spigots. Six spinnerets, ALS with six piriform gland spigots (Fig. 22H), and PMS with two spigots (Fig. 22I). Palps as in Figs. 21F and 21G, bulb with cleaver-shaped uncus, tip of appendix split into two parts, trochanter with short ventral apophysis. Palpal tarsal organ capsulate, on conical projection of cymbium (Fig. 22F).

Variation. Body length in other males 5.4–6.3. Color of specimens from Huangguoshu Waterfall more pronounced than in the holotype.

Female: in general very similar to male. Total length of bodies 5.6–7.2. A specimen measured (Huangguoshu Waterfall), total length 7.2, cephalothorax 1.3 long, 1.6 wide; abdomen 5.9 long, 2.1 wide. Tibia I: 6.4. Distance AME–AME 0.05. Diameter AME 0.10, ALE 0.21, PME 0.19, PLE 0.21. Tarsal organ capsulate on tarsus 1 as in Fig. 22A. Epigynum roughly triangular with swollen lateral edges as in Figs. 21A and 22B, a knob-shaped apophysis on the top. Dorsal view as in Fig. 21B, with a wavy sclerotized arch anteriorly and a pair of shoe-shaped pore plates.

Distribution. Yunnan, Guizhou, Hunan, Hubei.

Material examined. CHINA: **Yunnan**, Hekou County, collected from a cave, male holotype, 1♂ paratype, April 8, 1992, leg. M. S. Zhu (MHBU). **Guizhou**: Huangguoshu Waterfall, Anshun County, August 15, 2000, leg. J. X. Zhang, 1♂, 4♀ (MHBU); same data as above, but in October 1, 1997, 1♂, 4♀ (MHBU);

Chishui County, Chishui Natural Reserve, May 27, 2005, leg. H. M. Chen, 3♂, 11♀ (MHBU); Daozhen County, Dashahe Natural Reserve, May 26, 2004, leg. H. M. Chen and Z. S. Zhang, 4♂, 7♀ (MHBU). **Hunan:** Chenzhou City, Wugaishan State Forest Farm, May 19, 2002, leg. J. Y. Yang and Z. S. Zhang, 1♂ (MHBU). **Hubei:** Badong County, Bashan Forest Park, August 20, 2003, leg. J. X. Zhang, 1♂, 1♀ (MHBU).

Remark. The most important characters of this species are the conical projection of the cymbium and an arm-shaped procurus. Similar species, such as *P. bidentatus* and *P. gui*, are also distributed in southern China. We suggest they have a relatively close phylogenetic relationship.

Huber, B. A. 2011. Revision and cladistic analysis of *Pholcus* and closely related taxa (Araneae, Pholcidae). Bonner zool. Monographien 58: 1-510.

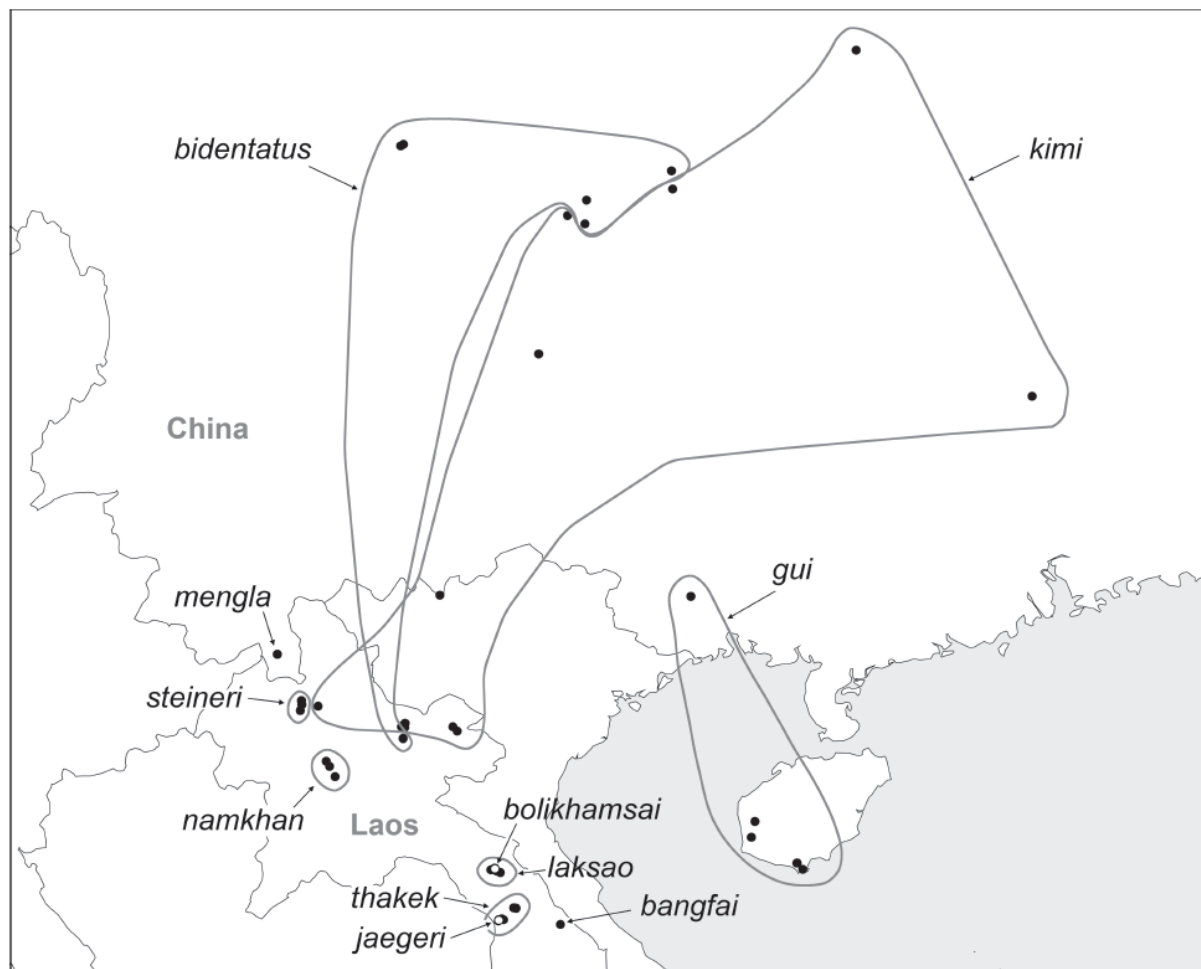


FIG. 2027. Known distribution of the *Pholcus bidentatus* species group.

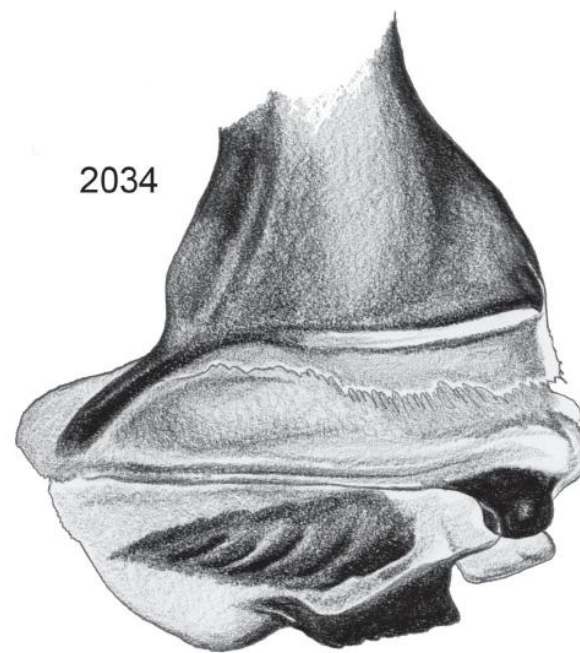


FIG. 2033, 2034. Tips of left procuri at same scale, dorsal views.
Scale line: 0.5.

2034. *Ph. kimi*.

Steiner), 3♀ in SMF. Vieng Thong, Tham Ho Neung (20°27.9'N, 103°21.0'E), 19.i.2010 (H. Steiner), 1♂2♀ in SMF. Xop, Tham Long Puang (20°28.4'N, 103°21.7'E), 16.i.2009 (H. Steiner), 2♂1♀ in SMF. *Oudomxay Prov.*: La district, Tham Phatiao Singkam (20°47.3'N, 102°02.3'E), 3.ii.2010 (H. Steiner), 2♂2♀ in SMF. SE of Oudomxay (=Muang Xai) city, ca. 3 km E of Tad Lak 11 (20°36.3'N, 102°01.3'E), 1020 m a.s.l., primary forest, 18.ix.2010 (P. Schwendinger), 1♂ 1 juv. in MHNG.

Pholcus kimi Song & Zhu, 1994

Fig. 2034

Pholcus kimi Song & Zhu 1994: 37-38, 44-45, figs. 2a-d. Song *et al.* 1999: 58, figs. 24i, j (copied from Song & Zhu 1994). Zhang *et al.* 2004: 77-78, figs. 1a-g. Zhang & Zhu 2009a: 43-47, figs. 21a-g, 22a-i.

Note. The specimens below are assigned tentatively because I have not seen the types. However, the tip of the procurus (especially when seen in dorsal view: Fig. 2034) is quite distinctive. In addition, *Ph. kimi* males have significantly larger and stronger palps but only slightly longer legs than *Ph. bidentatus* (tibia 1 in 9 males examined: 11.4-12.8; mean 12.0; tibia 1 in 8 females: 10.2-11.4; mean 10.9). Another character supposed to be distinctive by Zhang & Zhu (2009a) varies considerably in the material studied: the number of little spine-like processes on the appendix varies from 0-3, and even left and right appendix in a given individual may vary in this respect. They are thus not distinctive for *Ph. bidentatus*.

Distribution. Widely distributed in southern China (records in Zhang & Zhu 2009a) and in northern Laos (Fig. 2027).

New Records. LAOS: *Huaphan Prov.*: Tham Nam Long (20°27.8'N, 104°09.2'E), cave entrance area, 10.i.2008 (H. Steiner), 1♂ in SMF; Tham Houay Long Kou 1 (20°23.7'N, 104°13.4'E), 13.i.2008 (L. Price), 1♂ in SMF; same locality, 15.i.2008 (H. Steiner), 3♀ in SMF. Vieng Thong, Owl Cave II (20°31.1'N, 103°24.1'E), 17.i.2009 (H. Steiner), 1♂1♀ (2 vials) in SMF. Vieng Thong, Tham Mak Sak (20°27.0'N, 103°23.6'E), 20.i.2010 (H. Steiner), 1♂ in SMF. Vieng Thong, Tham Chao Houa Khao Khong (20°27.2'N, 103°23.8'E), 20.i.2010 (H.