

## CHINESE SPECIES OF THE JUMPING SPIDER GENUS *PORTIA* KARSCH (ARANEAE: SALTICIDAE)

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**Abstract.**—The present paper presents a revision of Chinese *Portia* spiders. A total of six species, including one new species—*Portia wui* Peng & Li, are known from China. Descriptions of new species and diagnosis of known species are given. Distributional data, a key to Chinese species, and illustrations of body and genital organs are provided.

**Key Words.**—Araneae, Salticidae, *Portia*, revision, new species, China.

The spider genus *Portia* was erected by Karsch (1878: 774) to accommodate *Portia schultzei* Karsch. Most known species of *Portia* distributed in the Oriental region, few in the Ethiopia. To have a better understanding on Chinese representatives of this jumping spider genus, we have examined the specimens of *Portia* deposited in the Institute of Zoology, Chinese Academy of Sciences (IZCAS), Hunan Normal University (HNU), and Lanzhou University (LZU). Results of this museum survey are reported in the present paper.

Descriptions were made based on specimens fixed in 80% ethanol. Specimens were examined and figured under SZ40-Olympus stereomicroscope. Epigynum was figured before it was dissected from the spider abdomen, while vulva was figured after it was macerated in lactic acid. The sequence of leg segments in measurement data is as follows: Total (femur, patella + tibia, metatarsus, tarsus). Measurements are given in millimeter (mm). Terminology adopted is that used by Wanless (1978).

Abbreviations used: AER-anterior eye row, AL-abdominal length, ALE-anterior lateral eye, AME-anterior median eye, AW-abdominal width, BTA-basal tibial apophyses, CD-conductor, CL-carapace length, CLYH-clypeus height, CW-carapace width, E-embolus, EFL-length of eye field, ITA- intermediate tibial apophyses, PER-posterior eye row, PLE-posterior lateral eye, RTA-retrolateral tibial apophyses, SD-sperm duct, T-tegulum, TA-tegular apophysis, TF-tegular furrow, TL-total length, VTA-ventral tibial apophysis.

### *PORTIA* KARSCH, 1878

*Sinis* Thorell, 1878, Ann. Mus. civ. stor. nat. Genova 13: 269. Type species *Salticus fimbriatus* Doleschall, 1859 by original designation.

*Portia* Karsch, 1878, Zeitschr. ges. Naturw 51: 744. Type species *Portia schultzei* Karsch, 1878 by original designation.

*Boethoportia* Hogg, 1915, Proc. Zool. Soc. Lond. 1915: 501. Type species *Boethoportia ocellata* Hogg, 1915.

*Neccocalus* Roewer, 1965, Annls Mus. r. Afr. cent. (Sci. Zool.) 139: 20. Type species *Cocalus africanus* Thorell, 1899 by original designation.

**Type Species.**—*Portia schultzei* Karsch, 1878, by original designation.

**Diagnosis.**—Medium to large spiders ranging from about 4.50 to 9.50 in length. Carapace high and elevated; usually with marked slope from PLE to posterior

margin of carapace; PME well developed, almost as big as ALE, about midway between ALE and PLE or closer to ALE; PER usually narrower than AER; EFL about 35–55 percent of carapace. Chelicera with 3 promarginal teeth and 3–6 retromarginal. Legs slender and long, with conspicuous fringes, spines numerous and strong. Abdomen usually ornate with tufts of hairs. Male palpal organ: bulb oval; embolus usually long and slender; tegulum with a deeply curved furrow, and sometimes with a small apophysis; tibia with numerous apophyses; cymbium usually with distinct flange. Epigynum weakly sclerotized, openings small and usually unclear; compulactory ducts short, wide and strongly sclerotized; spermathecae oval and big.

*Portia* is represented by 14 species worldwide, including 1 new species described in this paper. These include—*Portia albigimana* (Simon, 1900) (India to Vietnam), *P. assamensis* Wanless, 1978 (India to Malaysia), *P. crassipalpis* (Peckham & Peckham, 1907) (Singapore, Borneo), *P. fimbriata* (Doleschall, 1859) (Nepal, Sri Lanka to Australia), *P. heteroidea* Xie & Yin, 1991 (China), *P. hoggi* Zabka, 1985 (Vietnam), *P. jianfeng* Song & Zhu, 1998 (China), *P. labiata* (Thorell, 1887) (Sri Lanka to Philippines), *P. orientalis* Murphy & Murphy, 1983 (China), *P. quei* Zabka, 1985 (China, Vietnam), *P. schultzi* Karsch, 1878 (Central, East, Southern Africa, Madagascar), *P. songi* Tang & Yang, 1997 (China), *P. strandi* Caporiacco, 1941 (Ethiopia) and *P. wui* n. sp. (China). Up to now, a total of 6 *Portia* species including *P. orientalis* Murphy and Murphy, 1983 have been recorded from China.

#### KEY TO CHINESE SPECIES OF *PORTIA*

1. Male ..... 2
- Female ..... 7
2. Tibia with more than 3 apophyses (Figs. 1C, 2B) ..... 3
- Tibia with 3 apophyses ..... 4
3. Embolus slender and long, encircled with conductor basely in ventral view  
..... *P. jianfeng* (Fig. 1B)
- Embolus short with much larger base and sharp end, conductor invisible  
..... *P. songi* (Fig. 2B)
4. Cymbium with a horn-shaped apophysis in addition to flange (Figs. 3C,  
3D) ..... *P. wui*, NEW SPECIES
- Cymbium without apophysis, only with flange ..... 5
5. Tegulum furrow with deep curve ..... *P. quei*
- Tegulum furrow with shallower curve ..... 6
6. Chelicera with 4 retromarginal teeth, retrolateral tibial apophysis bar-like,  
with smooth end ..... *P. heteroidea*
- Chelicera with 3 retromarginal teeth, retrolateral tibial apophysis longer  
with sharp end ..... *P. orientalis*
7. Spermathecae spherical ..... 8
- Spermathecae (Fig. 2G) about cylindrical, its length twice its width .....  
..... *P. songi*
8. Epigynum with developed median septum, atrium circular ... *P. heteroidea*
- Epigynum without septum, atrium transverse, slit-like ..... *P. quei*

*PORTIA HETEROIDEA* XIE & YIN, 1991

*Portia heteroidea* Xie & Yin, 1991: 31, figs. 5–13 (male & female); Peng et al., 1993: 187, figs. 653–659 (male & female); Song, Chen & Zhu, 1997: 1740, figs. 53a–c (male); Song, Zhu & Chen, 1999: 541, figs. 311J, 312E (male & female).

**Diagnosis.**—Embolus of median length, its terminal end extended slightly beyond the retrolateral margin of cymbium in ventral view. Three tibial apophyses, ventral apophyses short, conic; intermediate apophyses smallest and shortest; retrolateral apophyses biggest and longest, bar-like, slightly swollen terminally. Tegulum furrow procurved arc-like, shallow; no tegular apophysis. In dorsal view, cymbium flange long and robust, its upper base originated from the median portion of cymbium, its end extended to median front margin of tibial apophysis. Epigynum with large atria, almost circular; median septum developed, posterior margin wider with slight incision; spermathecae big spherical, compulactory duct invisible. Abdomen with 5 yellow-brown circles, posterior 3 circles covered by gray-white hairs. This species is closely related to *P. quei* Zabka, 1985, but differs in: 1) embolus shorter; 2) retrolateral tibial apophysis shorter with round end, that of *P. quei* with hook-like end; 3) atria larger and almost circular, that of the latter wide slit-like; 4) epigynum with median septum which is absent in that of the latter.

**Specimens Examined.**—1 female, deposited in IZCAS, data: CHINA, SHAANXI PROVINCE, FUPING COUNTY Co.: 33.5° N, 108.0° E, 870–1000 m, 25 Jul 1998, by Chen Jun; 1 male, deposited in IZCAS, data: CHINA, GANSU PROVINCE, WENXIAN COUNTY Co.: 32.9° N, 104.7° E, 900–1500 m, 25 Jun 1998, by Chen Jun.

**Distribution.**—China (Gansu, Shaanxi, Hunnan, Hubei, Guizhou, Sichuan).

*PORTIA JIANFENG* SONG & ZHU, 1998

(Fig. 1)

*Portia jianfeng* Song & Zhu, 1998: 26, figs. 1–3 (male); Song, Zhu & Chen, 1999: 541, figs. 311 K–L (male).

**Diagnosis.**—Embolus belt-like, tapering distally; conductor well developed, enclosing the base of embolus in ventral view; tegulum long and diagonal, lower end almost extended to the right bottom of the bulb; tegulum apophysis developed, thin and triangular. 4 tibial apophyses: 3 in upper row, ventral one most stout; intermediate one short horn-like, bent ventrally in retrolateral view; retrolateral apophysis finger-like in retrolateral and dorsal views; basal apophysis biggest and very swollen, almost spherical in retrolateral view, and diagonal oblong in dorsal view. Abdomen with 2 gray longitudinal bands and pairs of gray patches. This species is allied to *P. songi* Tang & Yang, 1997, but can be distinguished from the latter by: 1) embolus much longer and thinner (Figs. 1B, 1C, 2B, 2C); 2) conductor well developed (Figs. 1B, 1C), enclosing the base of embolus in ventral view (Fig. 1B), that of *P. songi* without conductor (Figs. 2B, 2C, 3) tegulum furrow almost longitudinal (Fig. 1B) in ventral view, that of *P. songi* almost transverse (Fig. 2B); 4) cymbium thinner and longer (Figs. 1B–1D, 2B–2D); 5) abdominal patterns also quite different (Figs. 1A, 2A).

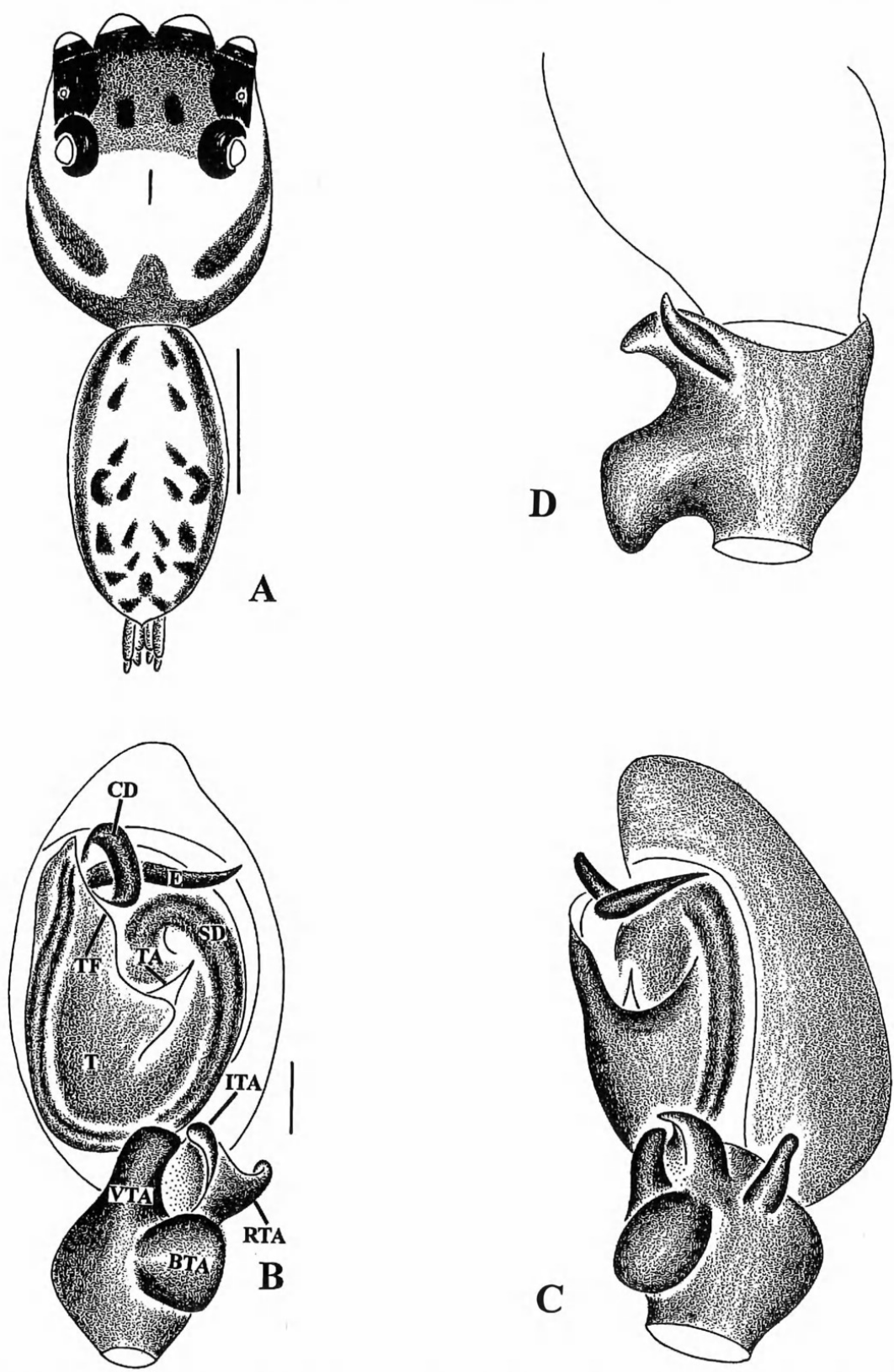


Figure 1. *Portia jianfeng* Song & Zhu, 1998. Figure 1A. Body of male, dorsal view. Figure 1B. Left palpal organ, ventral view. Figure 1C. Left palpal organ, retrolateral view. Figure 1D. Tibial apophysis, dorsal view. Scale bar: Figure 1A = 1.00 mm, Figure 1B–Figure 1D = 0.10 mm.



*Specimens Examined*.—2 males, deposited in IZCAS, data: CHINA, HAINAN PROVINCE, LEDONG COUNTY, JIANFENGLING Co.: 18.7°N, 109.1°E, Apr 1994, by Liao Cong-Hui.

*Distribution*.—China (Hainan).

*PORTIA ORIENTALIS* MURPHY & MURPHY, 1983

*Portia orientalis* Murphy & Murphy, 1983: 40, figs. 6, 9, 12, 16, 20 (male).

*Diagnosis*.—Embolus long and thin, narrowing gradually, terminal end extended beyond the retrolateral margin of cymbium in ventral view. Tegulum furrow curve shallow and narrow, tegular apophysis indistinct. 3 tibial apophyses, ventral apophysis very short, hook-like in retrolateral view; intermediate apophysis thin, very pale, covered by a tuft of long white hairs; retrolateral apophysis longest, terminal end hook-like in retrolateral view. In dorsal view, cymbium flange long and large, overlapping dorsum of retrolateral tibial apophysis, terminal end beyond the retromargin of tibial apophysis. This species resembles *P. assamensis* Wanless, 1978, but can be separated from the latter by: 1) retrolateral tibial apophysis longer and thinner; 2) cymbial flange stouter and shorter; 3) embolus longer.

*Specimens Examined*.—Type specimen was collected from Hong Kong and deposited in British Museum. No further specimens were collected from China. No specimens were examined in this study. The above information is after Murphy and Murphy (1983).

*Distribution*.—China (Hong Kong).

*PORTIA QUEI* ZABKA, 1985

*Portia quei* Zabka, 1985: 438, figs. 497–501 (male); Song, Chen & Gong, 1990: 15, figs. 1–4 (male & female); Chen & Zhang, 1991: 314, figs. 334.1–6 (male & female); Peng et al., 1993: 188, figs. 660–666 (male & female); Song, Zhu & Chen, 1999: 541, figs. 311M–N, 312F–G (male & female).

*Diagnosis*.—Embolus very long and thin, narrowing gradually, more than one third extended beyond the retrolateral margin of cymbium in ventral view; tegular furrow curve very deep, tegular apophysis indistinct. Three tibial apophyses, ventral apophysis thin and short, hook-like, bent retrolaterally; intermediate apophysis also very short, conical in retrolateral view; retrolateral apophysis long and thin, terminal portion hook-like. Cymbium flange thin, terminal portion overlapping on median portion of retrolateral tibial apophysis. Epigynum with wide slit-like atrium near epigastric groove, no median septum. Spermathecae big and spherical, compulsory duct invisible. This species is closely allied to *Portia heteroidea*. Differences between them are discussed in the diagnosis of *Portia heteroidea*.

*Specimens Examined*.—4 males, 6 immatures, deposited in HNU, data: CHINA, YUNNAN PROVINCE, NUJIANG COUNTY, QIQI Co.: 27.7° N, 98.7° E, 9–14 Jul 2000; 4 females, 3 immatures, deposited in HNU, data: CHINA, YUNNAN PROVINCE, GONGSHAN COUNTY Co.: 27.7° N, 98.6° E, 29 Jun 2000; 1 male, deposited in IZCAS, data: CHINA, GUANGXI ZHUANG AUTONOMOUS REGION, JINXIOU COUNTY Co.: 24.1° N, 110.1° E, 490 m, 1 Jul 2000, by Chen Jun; 1 female, deposited in IZCAS, data: CHINA, GUANGXI ZHUANG AUTONOMOUS REGION, JINXIOU COUNTY Co.: 24.1° N, 110.1° E, 1050–1100 m, 2 Jul 2000, by Chen Jun.

*Distribution*.—China (Hunan, Hubei, Guangxi, Sichuan, Guizhou, Yunnan), Viet Nam.

*PORTIA SONGI* TANG & YANG, 1997

(Fig. 2)

*Portia songi* Tang & Yang, 1997: 353, figs. 1–8 (male & female); Song, Zhu & Chen, 1999: 541, figs. 311O–P, 312H, 313A, 328Q (male & female).

*Diagnosis.*—Embolus short, basal portion large, terminal portion spine-like; tegular furrow slightly diagonal, tegular apophysis short and large; median apophysis short, conic. 5 tibial apophyses: ventral apophysis biggest, conic; retrolateral apophysis longest, terminal portion hook-like in ventral and dorsal views; in ventral view, 3 intermediate apophyses arranged in a line, top one longest and finger-like, median one shortest and conic, bottom one biggest and conic. Cymbium flange big and short in retrolateral view. Epigynum longer than wide, transparent, 2 belts looped near epigastric furrow; spermathecae with 2 chambers, length twice its width; compulATORY duct invisible. This species is allied to *P. jianfeng* Song & Zhu, 1998. Differences between them are discussed in the diagnosis of *P. jianfeng*.

*Specimens Examined.*—1 male, 1 female, deposited in LZU, data: CHINA, GUNSU PROVINCE, WENXIAN COUNTY Co.: 32.9° N, 104.7° E, Jun 1992, by Tang Ying-Qiu.

*Distribution.*—China (Gansu).

*PORTIA WUI* PENG & LI, NEW SPECIES

(Fig. 3)

*Type.*—Holotype, male, deposited in IZCAS, data: CHINA, GUANGXI ZHUANG AUTONOMOUS REGION, NAPO COUNTY, PINGMENG TOWN, BEIDOU TOWNSHIP, Co.: 23.4° N, 105.8° E, 500–550m, 10 Apr 1998, By WU Min (No. WM98GXsp.25).

*Measurements.*—Male: TL 6.60, CL 3.00, CW 2.70, AL 3.60, AW 1.60; legs: I 12.50 (3.10, 4.50, 3.40, 1.50), II 10.00 (2.50, 4.00, 2.50, 1.00), III 9.40 (2.50, 3.60, 2.30, 1.00), IV 12.80 (3.20, 4.00, 4.40, 1.20), formula 4, 1, 2, 3. AER 2.10, PER 1.90, AME 0.75, ALE 0.35, PME 0.25, PLE0.30, EFL 1.40, CLYH 0.50.

*Description.*—Male (holotype): Carapace (Fig. 3A) brown; ocular area light brown, base of AME brown, the other eyes surrounded with black bases; fovea black, longitudinal line-shaped; cervical and radial grooves black. Sternum yellow-brown, densely clothed in white and brown hair; margin dark brown with irregular black patches. Clypeus dark gray-brown, clothed in sparse hair; front margin gray-black. Chelicera dark gray-brown, anterior side darker, distal area and furrow margin clothed in gray-brown brush-like hair; furrow with 2 promarginal teeth and 3 retromarginal denticles (Fig. 3E). Endites and labium gray-black, distal area and inner sides clothed in gray-black long hair. Legs gray-brown with lighter annuli; ventral sides of tibiae and patellae clothed in dense brush-like long hair, which on tibia II is much denser and covers three fourth portion of tibia II; hair on the rest of segments very sparse; spines sparse and weak, 3 pairs on ventral sides of tibiae I and II, 2 pairs on ventral sides of metatarsi I and II. Abdomen cylindrical. Dorsum (Fig. 3A) gray-white with gray-black marks; cardiac pattern long bar-shaped, 2 muscular depressions darker and clear. Ventral side gray-black; each anterior side with a gray-white patch; 2 small gray-white circles on posterior median area. Spinnerets black brown. Palpal organ (Figs. 3B–D): embolus short and stout; seminal duct clear and S-shaped; 3 tibial apophyses, ventral one large and short, intermediate one smallest and finger-shaped, retrolateral one biggest and flag-shaped in dorsal view; cymbium flange slender and short; cymbium apophysis stout and horn-shaped.

*Female.*—Unknown.

*Diagnosis.*—The new species resembles *Portia heteroidea* Xie & Yin, 1991, but differs in: 1) embolus shorter and stouter; 2) retrolateral tibial apophysis much

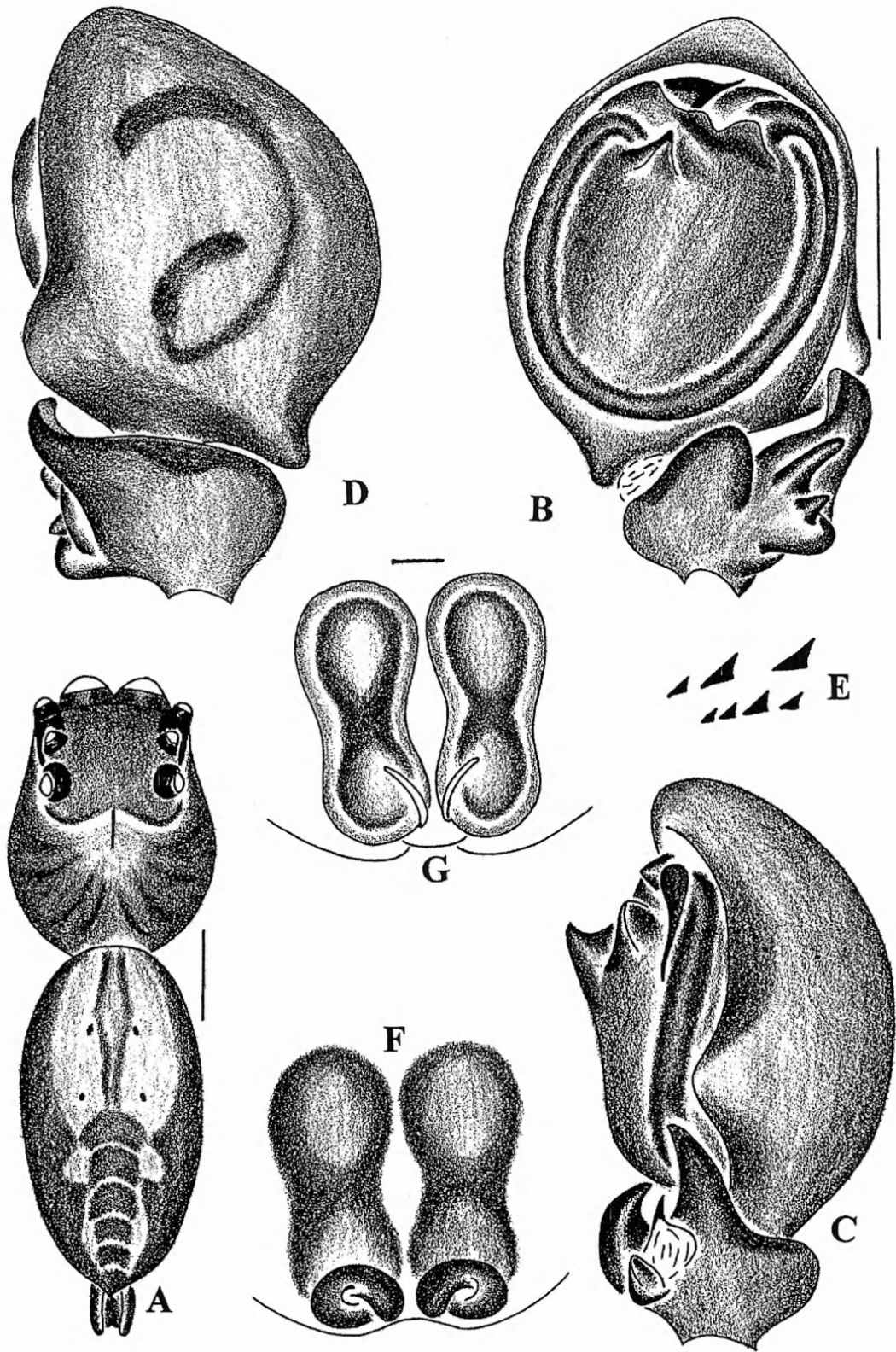


Figure 2. *Portia songi* Tang & Yang, 1997. Figure 2A. Body of male, dorsal view. Figure 2B. Left palpal organ, ventral view. Figure 2C. Left palpal organ, retrolateral view. Figure 2D. Left palpal organ, dorsal view. Figure 2E. Teeth of left male chelicera: upper—promargin, lower—retromargin. Figure 2F. Epigynum. Figure 2G. Vulva, dorsal view. Scale bar: Fig. 2A = 0.10 mm, Fig. 2B–Fig. 2D = 0.50 mm, Fig. 2F–Fig. 2G = 0.10 mm.

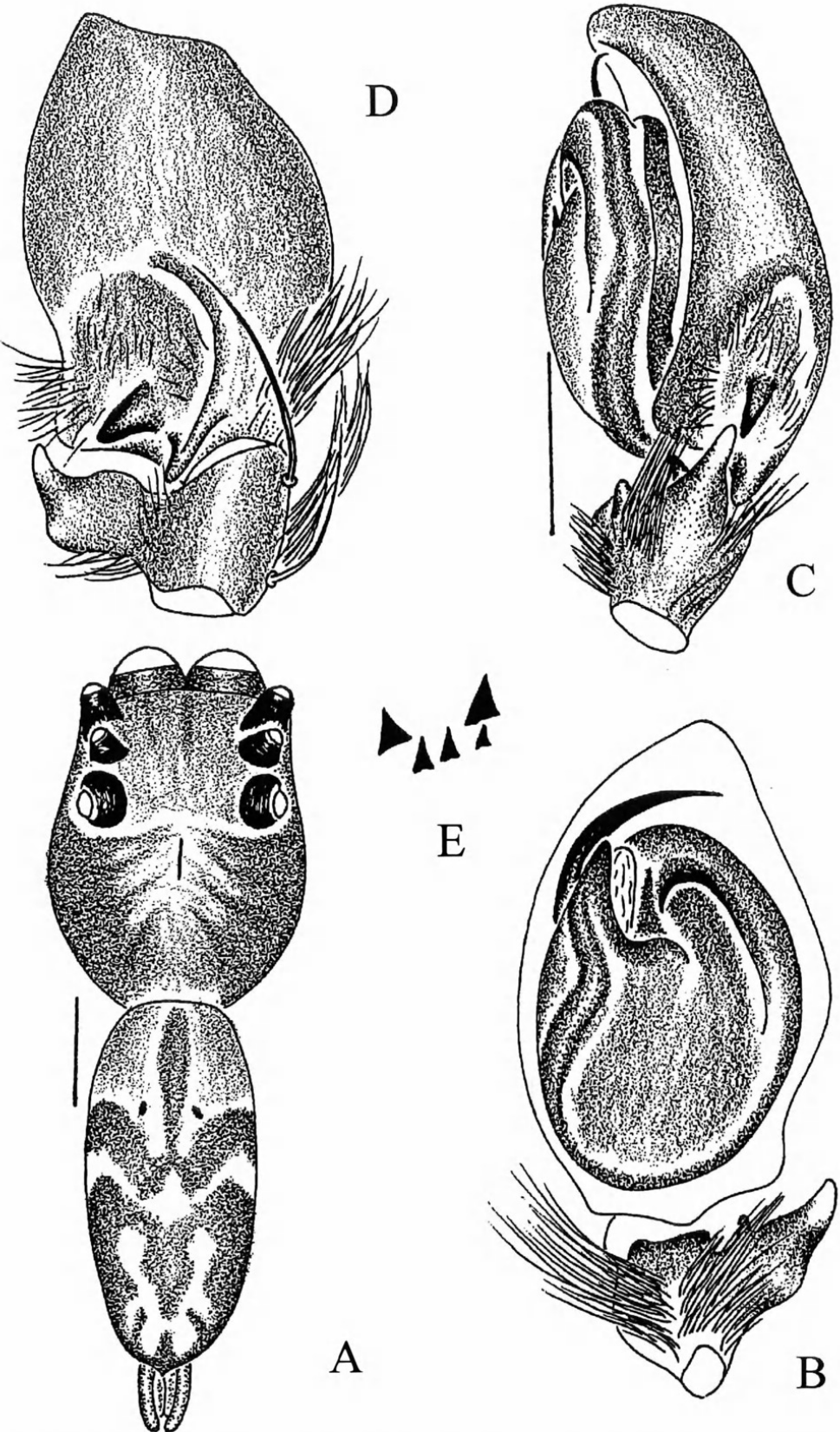


Figure 3. *Portia wui* Peng & Li, sp. nov. Figure 3A. Body of male. Figure 3B. Left palpal organ, ventral view. Figure 3C. Left palpal organ, retrolateral view. Figure 3D. Left palpal organ, dorsal view. Figure 3E. Teeth on left chelicera: upper—promargin, lower—retromargin. Scale bar: Fig. 3A = 1.00 mm, Fig. 3B–Fig. 3D = 0.5 mm.



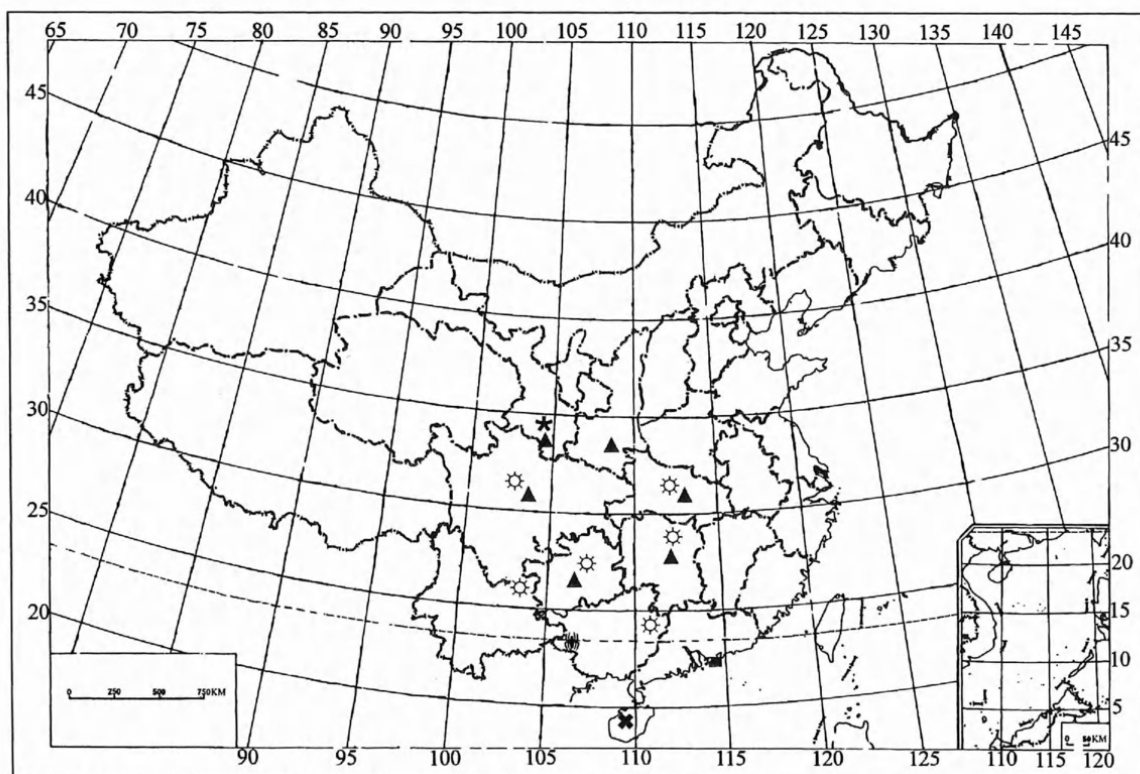


Figure 4. Distribution of Chinese Species of *Portia*. ▲ *Portia heteroidea*, ✕ *Portia jianfeng*, ■ *Portia orientalis*, ☆ *Portia quei*, ★ *Portia songi*, ■ *Portia wui*.

bigger, flag-shaped in dorsal view (Fig. 3D), that of the latter bar-shaped; 3) cymbium flange (Fig. 3D) much shorter and more slender; 4) cymbium with a stout horn-shaped apophysis (Figs. 3C, 3D) nearing cymbium flange, which cannot be found in any other known species of the genus; 5) abdominal marks much more distinct.

*Etymology*.—The new species is named in honor of Dr. WU Min, who collected the type specimen.

*Distribution*.—China (Guangxi).

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