

## Spiders of the genus *Habrocestoides* from China (Araneae: Salticidae)

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### Summary

This paper deals with ten Chinese *Habrocestoides* species. Three new species: *H. emeiensis*, *H. wulingensis* and *H. wulingoides*; two new combinations: *H. tibialis* (Zabka, 1985) and *H. kweilinensis* (Prószyński, 1992); females of the following two species are newly described in this paper: *H. dactyloides* (Xie, Peng & Kim) and *H. tibialis*. Type specimens are deposited in Hunan Biology Research Institute.

### Introduction

The genus *Habrocestoides* was proposed by Prószyński (1992b: 174), and so far seven species have been reported, two from India, the others from China (Prószyński, 1992a,b; Xie *et al.*, 1993).

This genus is very similar to *Habrocestum*, according to Zabka (1985) and Prószyński (1992b), but *Habrocestoides* differs in the genital organs and the lower and more sloping cephalothorax. While examining our collections, we found that it is not easy to distinguish these genera by the male palpal organs, but in *Habrocestoides* the embolus tends to be shorter and stouter, and its bulbus wider diagonally in the middle. In females of *Habrocestoides* the epigyne usually has a posterior plate, widened medially with a characteristic round internal structure, and copulatory canals usually arranged transversely; the epigyne of *Habrocestum* lacks the characteristic round internal structure, and the copulatory canals are usually arranged longitudinally; however, there are some exceptions in both genera. The geographical distribution should be considered in the identification of these genera. *Habrocestum* is mainly distributed in the Mediterranean region and Africa (Prószyński, 1990, 1992a), only one species (*H. orientale* Zabka, 1985: 228, figs. 211–216) being reported from Vietnam, but *H. orientale* is closer to *Habrocestoides*. *Habrocestoides* has been reported only from Asia (Prószyński, 1992a,b; Xie *et al.*, 1993).

In this paper, we present a systematic study of Chinese *Habrocestoides* species. Ten species are described, including three new species, two new combinations and two newly recorded females. All species are figured except *H. kweilinensis*, comb. nov.

Abbreviations used: AEW=eyes I width; AL=abdomen length; AW=abdomen width; CL=cephalothorax length; CW=cephalothorax width; EFL=eye field length; PEW=eyes III width; TL=total length. All measurements are in mm.

### Genus *Habrocestoides* Prószyński, 1992

*Habrocestoides* Prószyński, 1992b: 174.

*Type species: Habrocestoides bengalensis* Prószyński, 1992.

*Description:* Small spiders (length less than 5.0). Cephalothorax highest between eyes III and fovea, eye field and thorax sloping, eyes III equal to or slightly narrower than eyes I. Leg I shorter or longer than IV in male, shorter than IV in female. Palpal organ in ventral view with bulbus divided diagonally into narrower anterior part with sperm duct and broader posterior part, the latter narrowing posteriorly; embolus short, usually slightly bent; one or two tibial apophyses. Epigyne with a pair of depressions, copulatory openings facing laterally; epigyne of most species with posterior plate widened medially and with a characteristic round internal structure, copulatory canals arranged transversely; but *Habrocestoides dactyloides* Xie *et al.*, 1993 has epigyne with a bell-shaped hood, and copulatory canals arranged longitudinally. Accessory glands clearly visible.

### *Habrocestoides dactyloides* Xie, Peng & Kim, 1993 (Figs. 1–7)

*Habrocestoides dactyloides* Xie *et al.*, 1993: 23, figs. 1–4 (♂).

*Material:* Male holotype, Mt. Huping, Shimen, Hunan, 23 October 1975, collected by a student (name not recorded); 1♀, Mt. Huang, Anhui, 23 October 1974; 1♀ 2♂, Daoxian, Hunan, 25 April 1991, leg. Gong Lian-su; 1♀, Mt. Yuelu, Changsha, Hunan, August 1986, leg. Xiao Xiao-qin; 1♀ 1♂, Daoxian, Hunan, 23 September 1987, leg. Gong Lian-su; 2♀ 6♂, Daoxian, Hunan, 7 July 1986, leg. Gong Lian-su.

*Diagnosis:* The male of this species resembles *H. sinensis* Prószyński, 1992 (Prószyński, 1992a: 94, figs. 16–21), but differs from the latter by: (1) embolus falcate, bent into S-shape, that of *sinensis* dagger-shaped, slightly bent; (2) tibial apophysis more slender. The female resembles *Habrocestum kweilinensis* Prószyński, 1992 (Prószyński, 1992a: 96, figs. 33, 34), but the epigyne of the latter lacks the bell-shaped hood found in *H. dactyloides*; the internal structure of the epigyne is also different.

*Male holotype:* TL 2.9, CL 1.55, CW 1.3, AEW 1.15, PEW 1.1, EFL 0.6, AL 1.4, AW 1.1. Carapace reddish brown, with dense white hairs; eyes I nearly straight, eye field darker, posterior margin of eyes I and lateral margins of eye field covered with brown setae. Chelicerae reddish brown, 2 promarginal teeth, 1 retro-marginal. Endites, labium and sternum yellowish brown, short and slender, each segment of legs with black-brown annuli on distal and basal ends except leg I. Abdomen oval, dorsum yellowish brown with dark brown marks (Fig. 1); ventrally yellow. Palpal organ (Figs. 2–4): embolus the longest among the genus and bent into S-shape; tibial apophysis also longest of genus.

*Female:* TL 3.0–4.0. Specimen of TL 3.3 measured: CL 1.6, CW 1.3, AEW 1.1, PEW 1.05, EFL 0.75, AL 1.7, AW 1.2. Carapace dark brown, with black margins, covered by dense white hairs and sparse long brown hairs; anterior four eyes equidistant, diameter of AME about twice that of ALE, PME at midpoint

between ALE and PLE, lateral margins of eye field black. Sternum oval, yellowish brown, covered with brown hairs. Clypeus low, height less than one-fourth diameter of AME. Chelicerae brown, 2 promarginal teeth, 1 retromarginal. Endites and labium yellow, distal end covered with pale hairs. Legs yellowish brown, with dark annuli and short brown hairs, spines sparse. Formula: 4, 3, 1, 2. Measurements:

Leg	Fe	Pa+Ti	Mt	Ta	Total
I	1.4	1.6	0.5	0.7	4.2
II	1.3	1.5	0.5	0.7	4.0
III	1.7	1.7	0.8	0.7	4.9
IV	1.7	1.7	1.0	0.7	5.1

Abdomen oval, pattern as in male, ventrally yellow, with greyish black dots. Epigyne (Fig. 5): with medial bell-shaped hood and no posterior round structure internally. Vulva (Figs. 6, 7): copulatory canals arranged longitudinally.

**Discussion:** Both sexes have been collected from the same place by the same collector at the same time (see material); males accord with females in the form of cephalothorax, ratios of eye sizes and arrangement of eyes, and abdominal pattern, so they are almost certainly correctly matched. The male resembles *Habrocestoides sinensis*, but the female resembles *Habrocestum kweilinensis*. This suggests that either *Habrocestum kweilinensis* (only the female was described) should belong in *Habrocestoides* or these two genera should be synonymised. Prószyński (1992a) stated that his classification of *Habrocestum kweilinensis* was provisional, so possibly it is better to transfer *Habrocestum kweilinensis* to *Habrocestoides* as

*Habrocestoides kweilinensis* (Prószyński, 1992), new combination.

**Distribution:** China (Anhui, Hunan).

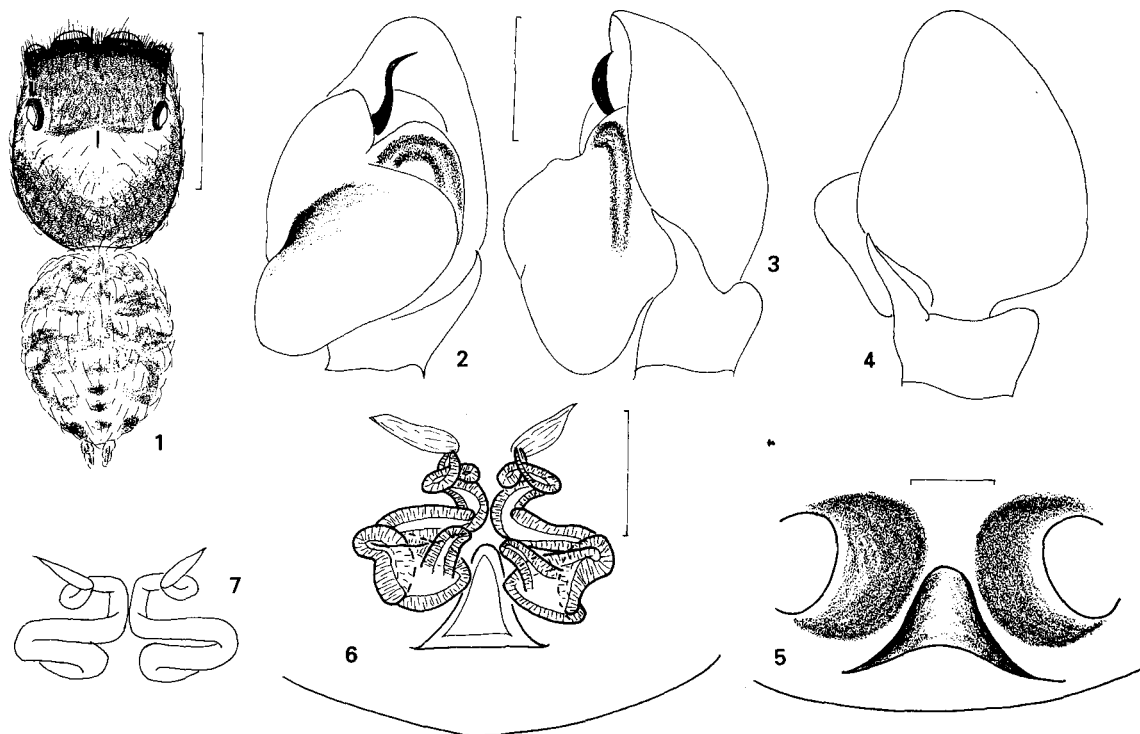
***Habrocestoides emeiensis*, sp. nov.** (Figs. 8–11)

**Material:** Female holotype, 2♀ paratypes, Mt. Emei, Sichuan, August 1980, leg. Chen Xiao-en. Paratypes: 2♀, Qianling Park, Guizhou, 21 July 1985, leg. Zhu Chuan-dian; 1♀, Mt. Qingchen, Sichuan, 19 August 1978, leg. Zhu Chuan-dian.

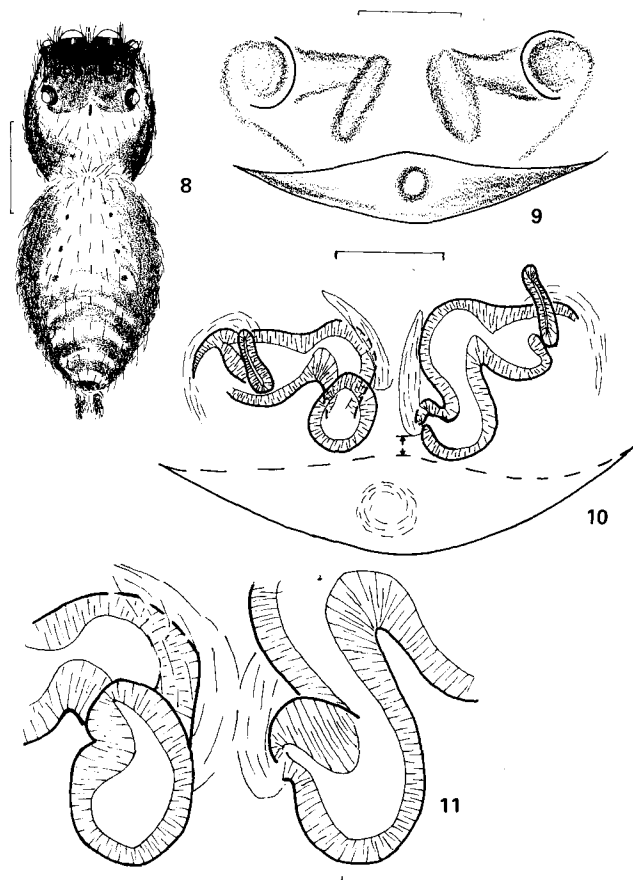
**Etymology:** The specific name is derived from the type locality, Mt. Emei.

**Diagnosis:** This new species is allied to *H. szechwanensis* Prószyński, 1992 (figs. 26–28), but differs from the latter by: (1) accessory gland attached to or on outside of copulatory opening (Fig. 10); (2) fertilisation duct close to posterior plate, almost vertical to distal part of copulatory canal (Fig. 10 cf. Fig. 27); (3) copulatory canal shorter.

**Female:** TL 4.0–4.5. Holotype: TL 4.3, CL 1.8, CW 1.7, AEW 1.3, PEW 1.3, EFL 0.9, AL 2.5, AW 1.9. Carapace black-brown, with sparse white hairs, margins and eye field black, fovea and radial furrows distinct; anterior four eyes equidistant, diameter of AME twice that of ALE, ALE equal to PLE, PME at midpoint between ALE and PLE. Sternum oval, with long white hairs, margin dark brown. Clypeus low, with white hairs, height about one-fourth diameter of AME. Chelicerae brown, two promarginal teeth, one retromarginal. Endites and labium brown, light distal ends with dense hairs. Legs light brown, with black annuli. Legs I and II with sparse lateral spines, III and IV with denser ones; three pairs of ventral spines



Figs. 1–7: *Habrocestoides dactyloides* Xie et al., 1993. 1 Body of male; 2 Palpal organ, ventral; 3 Ditto, lateral; 4 Ditto, dorsal; 5 Epigyne; 6 Vulva, dorsal; 7 Course of copulatory canal. Scale lines = 1.0 mm (1), 0.1 mm (2–7).



Figs. 8-11: *Habrocestoides emeiensis*, sp. nov. **8** Body; **9** Epigyne; **10** Vulva, dorsal; **11** Spermatheca. Scale lines=1.0 mm (8), 0.1 mm (9-11).

on tibia I, five ventral spines on tibia II, two pairs of spines on metatarsi I and II. Formula: 4, 3, 1, 2. Measurements:

Leg	Fe	Pa+Ti	Mt	Ta	Total
I	1.0	1.5	0.5	0.6	3.6
II	1.0	1.3	0.5	0.6	3.4
III	1.5	1.5	0.5	0.6	4.1
IV	1.3	1.4	1.0	0.6	4.3

Abdomen oval, dorsum greyish black; three clear pairs of muscle depressions, five light transverse striae on posterior half (Fig. 8). Ventrally greyish yellow, with black dots. Spinnerets light brown. Epigyne: Fig. 9. Vulva (Figs. 10-11): accessory gland bar-shaped, attached to or on outside of copulatory opening. Fertilisation duct almost vertical to distal part of copulatory canal.

*Male*: Unknown.

*Distribution*: China (Sichuan, Guizhou).

***Habrocestoides furcatus* Xie, Peng & Kim, 1993 (Figs. 12-16)**

*Habrocestoides furcatus* Xie et al., 1993: 24, figs. 5-9 (♂).

*Material*: Male holotype, Zhangjiajie Forest Park, Dayong, Hunan, August 1981, leg. Wang Jia-fu.

*Diagnosis*: This species is allied to *H. sinensis*, but differs from the latter by: (1) embolus much shorter

and thinner, slightly bifurcated in retrolateral view (Fig. 15 cf. Fig. 20); (2) tibial apophysis fork-shaped in retrolateral view (Fig. 15); (3) bulb stouter (Fig. 13 cf. Fig. 18).

*Male holotype*: TL 3.35, CL 1.8, CW 1.5, AEW 1.4, PEW 1.3, EFL 0.7, AL 1.6, AW 1.2. Carapace reddish brown, eye field dark brown, with brown setae; eyes I straight, diameter of AME about twice that of ALE, ALE slightly larger than PLE, PME at mid-point between ALE and PLE. Chelicerae orange (also endites, labium and sternum), 2 promarginal teeth and 1 retromarginal. Legs yellowish brown, short and strong, black-brown annuli distally on femur, patella and tibia. Abdomen oval, pattern as in Fig. 12, ventrally yellowish brown. Palpal organ (Figs. 13-16): embolus very short, spine-shaped in prolateral view (Fig. 13), slightly bifurcated in retrolateral view (Fig. 15); tibial apophysis hook-shaped in ventral view (Fig. 14), fork-shaped in retrolateral view (Fig. 15).

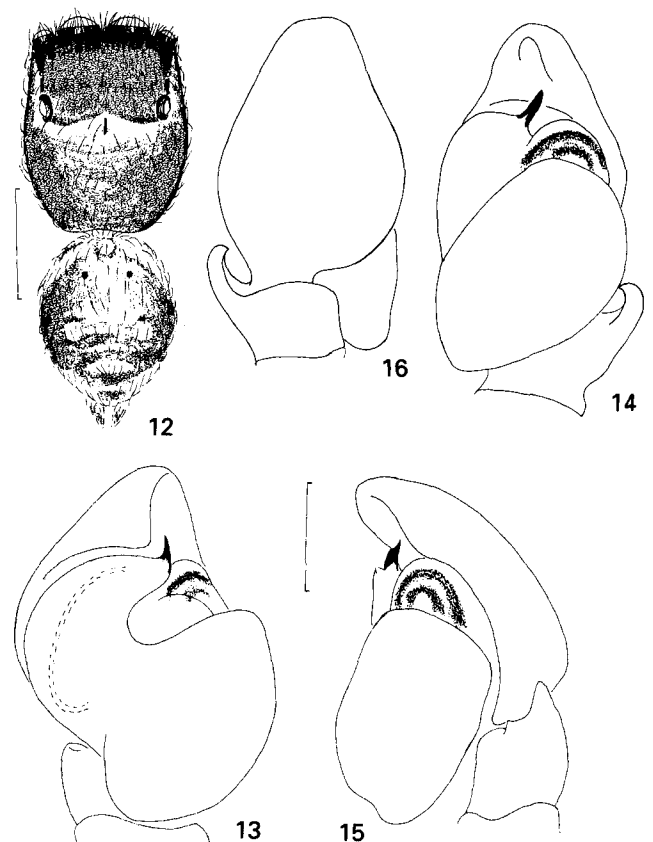
*Female*: Unknown.

*Distribution*: China (Hunan).

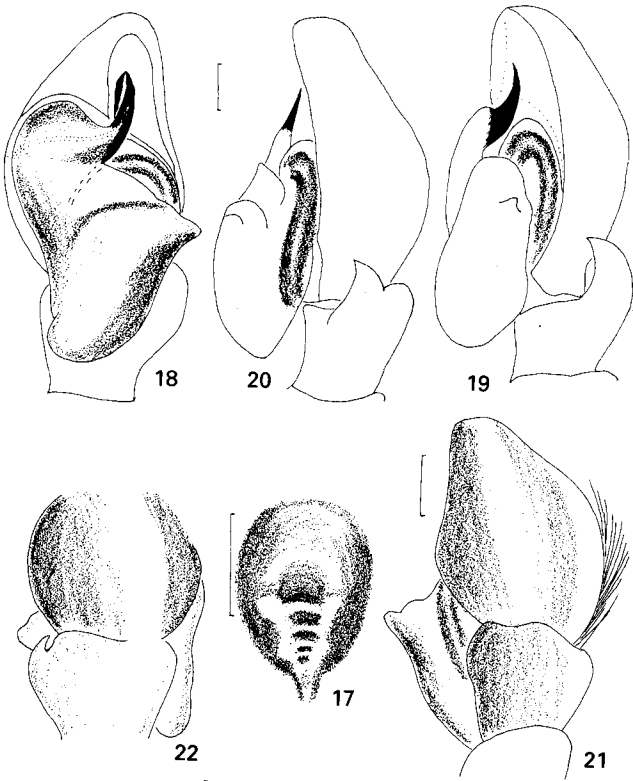
***Habrocestoides sinensis* Prószyński, 1992 (Figs. 17-22)**

*Habrocestoides sinensis* Prószyński, 1992a: 94, figs. 16-21 (♂).

*Material*: The type specimen was collected from Hubei, China, and deposited in San Francisco. I have



Figs. 12-16: *Habrocestoides furcatus* Xie et al., 1993. **12** Body; **13** Palpal organ, prolateral; **14** Ditto, ventral; **15** Ditto, retrolateral; **16** Ditto, dorsal. Scale lines=1.0 mm (12), 0.1 mm (13-16).



Figs. 17–22: *Habrocestoides sinensis* Prószyński, 1992. **17** Abdomen, dorsal; **18** Palpal organ, ventral; **19** Ditto, ventrolateral; **20** Ditto, retrolateral; **21–22** Ditto, dorso-lateral, showing dorsal streak of white setae. Scale lines=1.0 mm (17), 0.1 mm (18–22).

had no opportunity to examine it. No new representative has been collected. The following diagnosis and figures are after Prószyński (1992a).

**Diagnosis:** The male of this species resembles *H. furcatus*, but can be distinguished from the latter by: (1)

pedipalps with thin streak of white setae dorsally along mid-line of cymbium and tibia (Figs. 21, 22); (2) tibial apophysis not fork-shaped in retrolateral view (Fig. 20); (3) embolus relatively thicker and longer (Figs. 18, 19), not bifurcated in retrolateral view (Fig. 20); (4) abdominal pattern (Fig. 17).

**Female:** Unknown.

**Distribution:** China (Hubei).

***Habrocestoides szechwanensis* Prószyński, 1992** (Figs. 23–28)

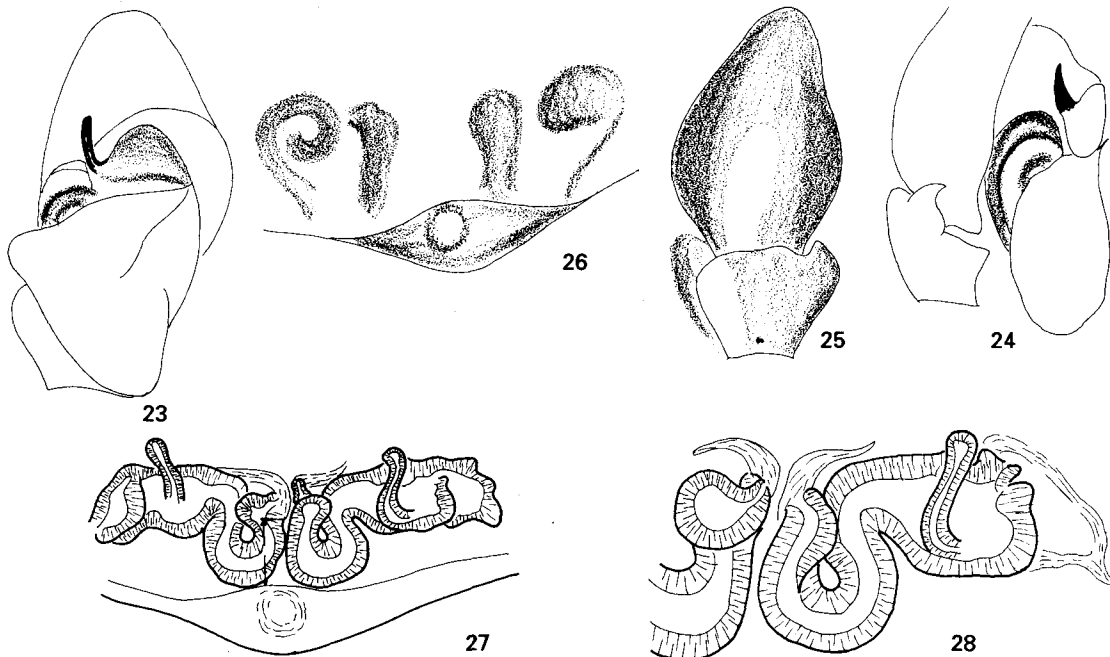
*Habrocestoides szechwanensis* Prószyński, 1992a: 94, figs. 22–27 (♂♀).

**Material:** The type specimens were collected from Sichuan, China, damaged and deposited in the collection of the Smithsonian Institution, Washington DC. I have had no opportunity to examine them, and no new representatives have been found. The following diagnosis and figures are after Prószyński (1992a).

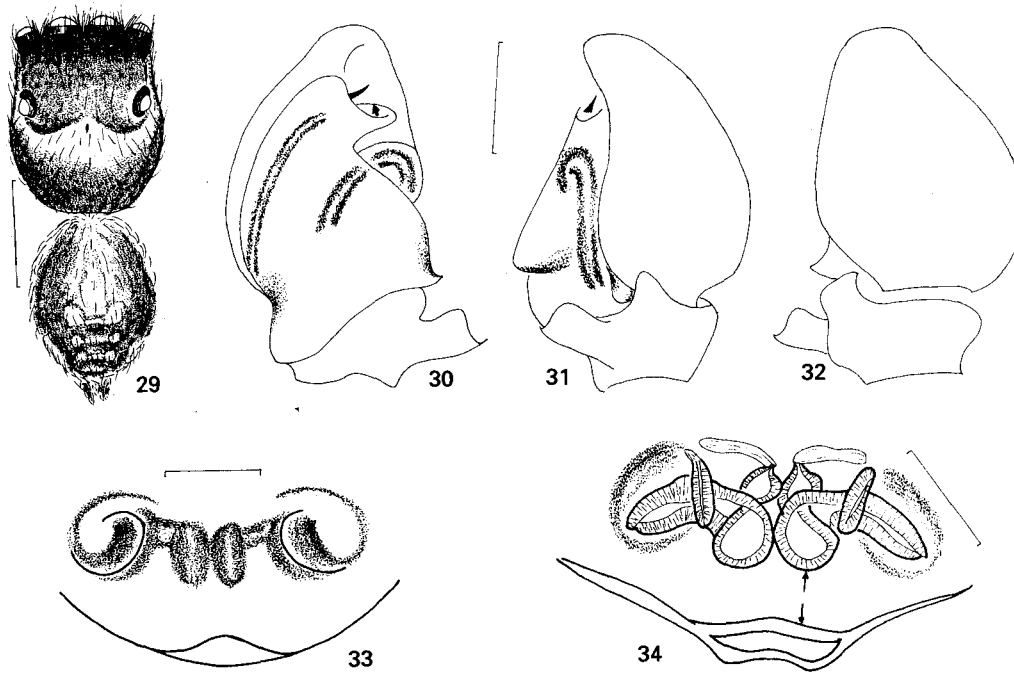
**Diagnosis:** The male of this species resembles that of *H. sinensis*, but differs from the latter by: (1) embolus shorter and more slender (Figs. 23, 24); (2) tibial apophysis shorter (Fig. 24); (3) bulb without small outgrowth (Fig. 24) found in that of *H. sinensis* (Figs. 19, 20); patch of white setae dorsally on cymbium shorter (Fig. 25).

The female is similar to that of *H. emeiensis*, but differs from the latter by: (1) accessory gland located at the middle of the distal part of the copulatory canal (Figs. 27, 28); (2) fertilisation duct far away from posterior plate, and almost parallel to the distal part of the copulatory canal (as arrowed in Fig. 27); (3) copulatory canal longer. Epigyne: Fig. 26.

**Distribution:** China (Sichuan).



Figs. 23–28: *Habrocestoides szechwanensis* Prószyński, 1992. **23** Palpal organ, ventral; **24** Ditto, lateral; **25** Ditto, dorsal; **26** Epigyne; **27** Vulva, dorsal; **28** Spermatheca, dorsal. After Prószyński (1992a), the original paper without scale.



Figs. 29–34: *Habrocestoides tibialis* (Zabka, 1985) comb. nov. **29** Body of male; **30** Palpal organ, ventral; **31** Ditto, lateral; **32** Ditto, dorsal; **33** Epigyne; **34** Vulva, dorsal. Scale lines=1.0 mm (29), 0.1 mm (30–34).

***Habrocestoides tibialis* (Zabka, 1985) comb. nov.** (Figs. 29–34)

*Phintella tibialis* Zabka, 1985: 430, figs. 442–443 (♂).

*Phintella tibialis*: Peng et al., 1993: 161, figs. 565–568 (♂).

**Material:** 4♀ 1♂, Mt. Huping, Shimen, Hunan, July 1992, leg. Peng Xian-jin & Xie Li-ping; 4♀ 5♂, Daoxian, Hunan, 3 October 1987, leg. Gong Lian-su; 1♀ 2♂, Daoxian, Hunan, 6–7 April 1992, leg. Gong Lian-su; 1♀, Zhangjiajie, Dayong, Hunan, 18 October 1984, leg. Zhang Yong-jing; 2♀, Congan, Fujian, 21 June 1986, leg. Peng Xian-jin; 1♀, Zhangjiajie, Dayong, Hunan, August 1981, leg. Wang Jia-fu.

**Diagnosis:** This species is allied to *H. szechwanensis*, but can easily be distinguished from the latter by: (1) embolus much thinner and shorter, spine-shaped; (2) a twisted lamellar outgrowth (arrowed in Fig. 30) surrounding embolus; (3) two larger tibial apophyses (Figs. 31,32); (4) posterior plate of epigyne without a round internal structure; (5) spermatheca with two chambers (Fig. 34).

**Male:** TL 3.0–3.5. Specimen of TL 3.0 measured: CL 1.5, CW 1.25, AEW 1.15, PEW 1.1, EFL 0.6, AL 1.35, AW 1.05. Carapace yellowish brown, black-brown in eye field and on posterior and lateral margins. Chelicerae and endites yellowish brown, 2 promarginal teeth, 1 retromarginal. Legs slender, yellowish brown; black brown on distal part of femur and mesal sides of patella and tibia of leg I. Abdomen oval, dorsum dark brown with white pattern (Fig. 29); ventrally yellowish white, no pattern. Palpal organ (Figs. 30–32): two large tibial apophyses; embolus spine-shaped, very short, surrounded by a twisted lamellar outgrowth; two parts of sperm duct clearly visible.

**Female:** TL 3.25–4.2. Specimen of TL 3.3 measured: CL 1.5, CW 1.3, AEW 1.2, PEW 1.15, EFL 0.65,

AL 1.8, AW 1.4. Carapace brown, fovea distinct; anterior four eyes equidistant, diameter of AME about twice that of ALE, ALE=PLE. Sternum oval, light brown, darker at edge. Clypeus low, light brown. Paturon with a black longitudinal stria along promargin. Endites and labium brown, distal ends with dense fine hairs. Legs light brown, with long ventral spines, lateral spines sparse; three pairs of ventral spines on tibia I, five ventral spines on tibia II, two pairs of ventral spines on metatarsi I and II. Formula: 4, 3, 1, 2. Measurements:

Leg	Fe	Pa+Ti	Mt	Ta	Total
I	0.9	1.0	0.4	0.3	2.6
II	0.7	0.9	0.4	0.3	2.3
III	1.0	0.9	0.5	0.3	2.7
IV	1.1	1.0	0.6	0.4	3.1

Abdomen oval, dorsum greyish black; one light grey arc on anterior margin, six light coloured arcs on median area of posterior half, three pairs of muscle depressions; ventrally yellow, with three obscure longitudinal black striae in median area and black inclined striae in two lateral areas. Spinnerets greyish brown. Some specimens with three prominent wide longitudinal black bands. Epigyne and vulva (Figs. 33–34): posterior plate narrow, without round internal structure; spermatheca with two chambers; spermatheca and copulatory canal widely separated from posterior plate (arrowed in Fig. 34).

**Discussion:** This species was first described as *Phintella tibialis* by Zabka based on a single male palpal organ, without body (Zabka, 1985: 430, figs. 442–443). Peng, Xie & Xiao redescribed the male in 1993 (Peng et al., 1993: 161, figs. 565–568), including a figure of the body and detailed description. Recently, while examining our collections, we found many males together with

females collected by the same collector at the same time and place (see material); both sexes have the same eye arrangements and ratios of eye sizes and length/width of cephalothorax. We therefore consider that the male and female are correctly matched, and transfer *Phintella tibialis* Zabka, 1985 to *Habrocestoides* as *H. tibialis* (Zabka, 1985), new combination.

*Distribution*: Vietnam, China (Hunan, Fujian).

***Habrocestoides validus* Xie, Peng & Kim, 1993** (Figs. 35–38)

*Habrocestoides validus* Xie et al., 1993: 25, figs. 10–13 (♂).

*Material*: Male holotype, Lingxian, Hunan, July 1976, leg. Yin Chang-min; 1♂, Jiagyong, Hunan, 16 August 1993, leg. Yan Hen-mei.

*Diagnosis*: This species resembles *H. sinensis*, but differs from the latter by: (1) pedipalp without thin streak of white setae found in the latter (Figs. 21, 22); (2) embolus more slender (Fig. 36); (3) tibial apophysis more robust, with blunt end (Figs. 36–38), that of *H. sinensis* with pointed end (Figs. 19, 20); (4) bulb (Fig. 37) without small outgrowth found in *H. sinensis* (Fig. 19).

*Male*: TL 3.35, CL 1.8, CW 1.45, AEW 1.3, PEW 1.3, EFL 0.75, AL 1.6, AW 1.3. Carapace dark brown with white hairs on lateral margin; dense brown setae behind eyes I and on lateral margins of eye field, eyes I straight. Chelicerae reddish brown, 2 promarginal teeth, 1 retro-marginal. Sternum, endites and labium brown. Legs slender and short; distal part of femur, patella and tibia

of leg I black-brown, other segments yellowish brown; legs II–IV yellowish brown with annuli on distal and basal ends of each segment. Abdomen oval, black-brown, with dense brown and greyish white fine hairs; one curved band formed by greyish white hairs on anterior margin, many yellowish brown inclined striae laterally, four or five yellowish brown bands with greyish white hairs along median longitudinal line, two oval light patches at its sides (Fig. 35). Palpal organ (Figs. 36–38): embolus slender, finger-shaped in ventral view; tibial apophysis stout, curved and blunt ended; bulb with triangular lateral projection.

*Female*: Unknown.

*Distribution*: China (Hunan).

***Habrocestoides wulingensis*, sp. nov.** (Figs. 39–43)

*Material*: Female holotype, 1♀ paratype, Mt. Wuling, Suoxiyu, Cili, Hunan, August 1981, leg. Wang Jia-fu.

*Etymology*: The specific name is derived from the type locality, Mt. Wuling.

*Diagnosis*: This new species is closely related to *H. wulingoides* sp. nov., but differs from the latter by: (1) abdominal pattern with two pairs of large white patches and many scattered black striae (Fig. 39), that of *H. wulingoides* with many black inclined striae but without large white patches (Fig. 44); (2) accessory gland not covered by a lamella as found in *H. wulingoides* (arrowed in Fig. 47).

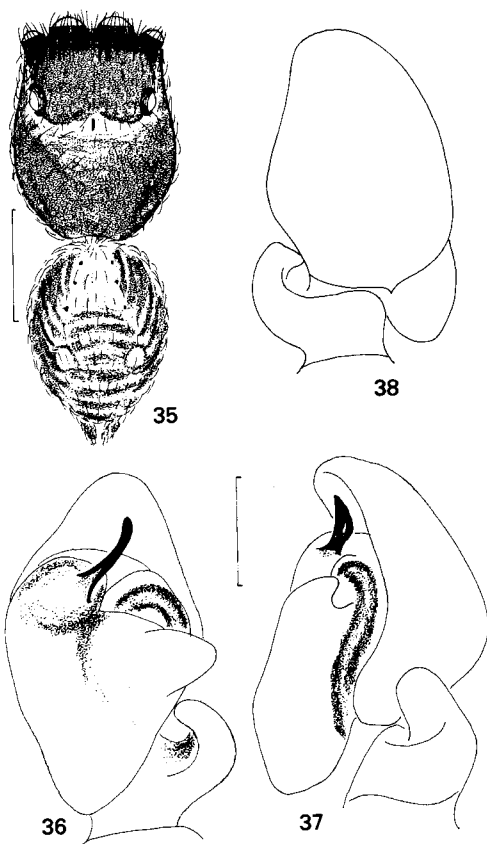
*Female*: TL 3.4–5.0. Holotype: TL 5.0, CL 2.0, CW 1.7, AEW 1.4, PEW 1.3, EFL 0.9, AL 3.2, AW 2.3. Carapace brown to dark brown with black margin, fovea and radial furrow distinct; anterior four eyes equidistant, diameter of AME about twice that of ALE, ALE=PLE, PME at midpoint between ALE and PLE. Sternum oval, brown, margin with long hairs. Clypeus brown, low, height less than one-third radius of AME. Chelicerae dark brown, two promarginal teeth, 1 retro-marginal. Endites and labium dark brown, distal end pale and with dense fine hairs. Legs yellow to light brown, dark annuli on distal part of each segment (paratype without annuli). Legs I and II with sparse lateral spines, three pairs of ventral spines on tibia I, 5 ventral spines on tibia II, two pairs of ventral spines on metatarsi I and II. Formula: 4, 3, 1, 2. Measurements:

Leg	Fe	Pa+Ti	Mt	Ta	Total
I	1.2	1.4	0.5	0.5	3.6
II	1.0*	1.2	0.5	0.5	3.2
III	1.3	1.4	0.8	0.5	4.0
IV	1.3	1.5	0.9	0.5	4.2

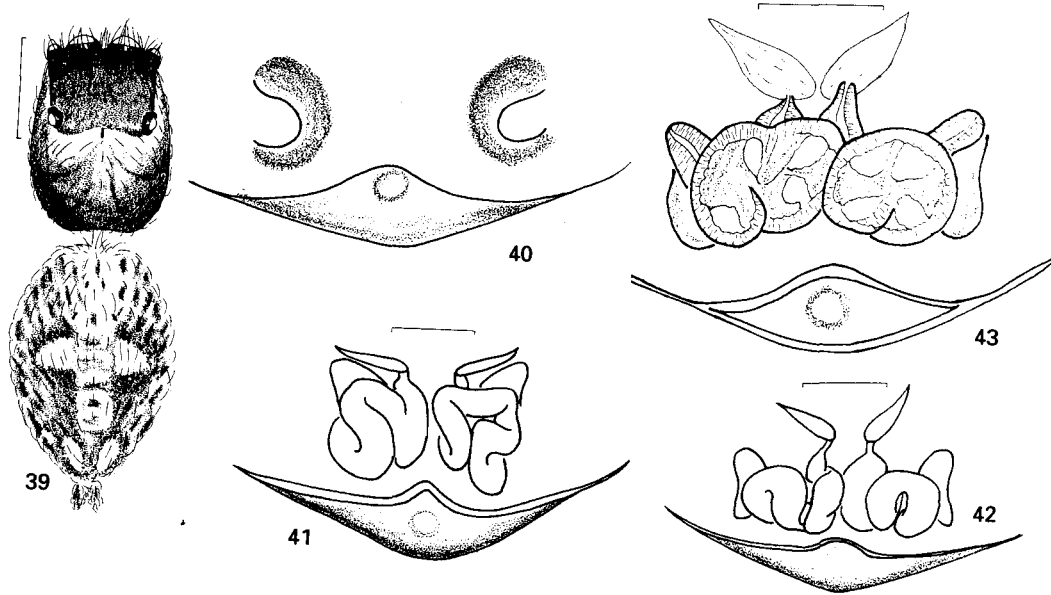
Abdomen oval, dorsum grey with scattered dark striae; two pairs of large white patches, anterior pair triangular and posterior pair oval (Fig. 39); ventrally yellowish, three obscure longitudinal black lines in median area, black inclined striae in two lateral areas. Spinnerets brown. Epigyne and vulva (Figs. 40–43): epigyne wide; copulatory canal complicatedly folded, slightly varied in manner of folding (Fig. 41, paratype; Figs. 42, 43, holotype).

*Male*: Unknown.

*Distribution*: China (Hunan).



Figs. 35–38: *Habrocestoides validus* Xie et al., 1993. **35** Body; **36** Palpal organ, ventral; **37** Ditto, lateral; **38** Ditto, dorsal. Scale lines=1.0 mm (35), 0.1 mm (36–38).



Figs. 39–43: *Habrocestoides wulingensis*, sp. nov. **39** Body; **40** Epigyne; **41** Course of copulatory canal, paratype; **42** Ditto, holotype; **43** Vulva, dorsal (holotype). Scale lines=1.0 mm (39), 0.1 mm (40–43).

***Habrocestoides wulingoides*, sp. nov.** (Figs. 44–47)

**Material:** Holotype female, Zhangjiajie, Dayong, Hunan, 26 August 1984, leg. Liu Ming-yao.

**Etymology:** The epigyne and vulva of this new species are very similar to that of *H. wulingensis*, hence the species name.

**Diagnosis:** This new species resembles *H. wulingensis* sp. nov., but can be distinguished from the latter by: (1) abdominal pattern with black inclined striae in two lateral areas and white arc striae in median area (Fig. 44), but without large white patches found in *H. wulingensis*; (2) folding of copulatory canal more complicated (Figs. 46,47); (3) accessory gland covered by a lamella (arrowed in Fig. 47), not present in *H. wulingensis*.

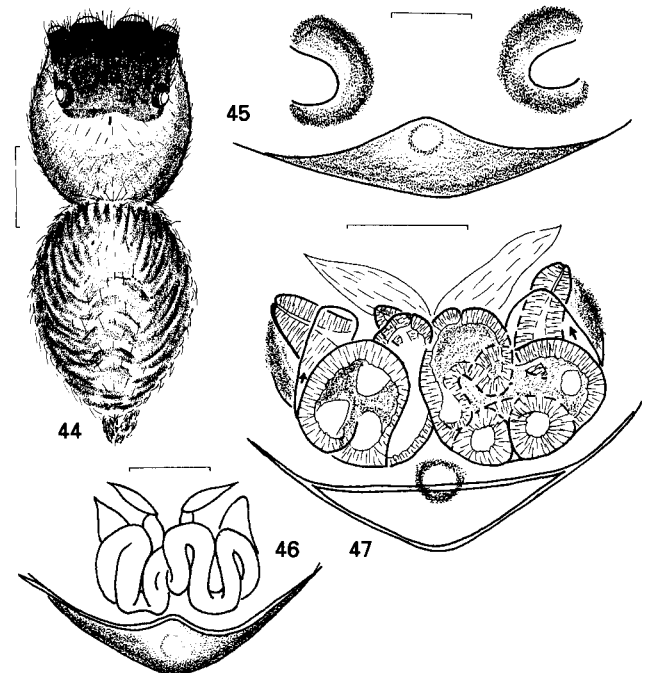
**Female holotype:** TL 5.0, CL 2.5, CW 2.2, AEW 1.7, PEW 1.5, EFL 1.0, AL 2.5, AW 2.0. Carapace brown, with sparse brown and white hairs, brownish black on margin and eye field; fovea and radial furrows distinct; anterior four eyes in straight line and equidistant, diameter of AME twice that of ALE, ALE=PLE, PME at midpoint between AME and PLE. Sternum light brown, with sparse brown hairs. Clypeus brown, low, height about one-third radius of AME; with long, sparse, white and brown hairs. Chelicerae brown; two promarginal teeth, one retromarginal; a long longitudinal black stria on paturon close to promarginal teeth. Endites and labium brown, with dense fine hairs on distal ends. Pedipalp with long white hairs, like brush. Legs brown, no dark annuli, with sparse brown hairs and long spines. Legs I and II without lateral spines, femur I with three distal dorsal spines, femur II with two, tibia I with three pairs of ventral spines, metatarsi I and II with two pairs, tibia II with five ventral spines. Formula: 4, 3, 1, 2. Measurements:

Leg	Fe	Pa+Ti	Mt	Ta	Total
I	1.4	1.5	0.6	0.6	4.1
II	1.25	1.35	0.6	0.6	3.8
III	1.5	1.5	0.8	0.6	4.4
IV	1.55	1.6	0.9	0.7	4.75

Abdomen oval, with sparse brown hairs, dorsum greyish brown, with dark pattern (Fig. 44); ventrally greyish brown, two discrete longitudinal black bands, merging posteriorly; black inclined striae in two lateral areas. Epigyne and vulva (Figs. 45–47): folding of copulatory canal the most complicated among the genus; accessory gland covered with a large lamella (arrowed in Fig. 47).

**Male:** Unknown.

**Distribution:** China (Hunan).



Figs. 44–47: *Habrocestoides wulingoides*, sp. nov. **44** Body; **45** Epigyne; **46** Course of copulatory canal; **47** Vulva, dorsal. Scale lines=1.0 mm (44), 0.1 mm (45–47).

Key to Chinese *Habrocestoides* species

## Females

1. Epigyne with a bell-shaped hood; copulatory canal arranged longitudinally (Fig. 6).....*dactyloides*  
— Epigyne without bell-shaped hood; copulatory canal arranged transversely .....2
2. Epigynal posterior plate without characteristic round internal structure; two-chambered spermatheca (Fig. 34).....*tibialis*  
— Epigynal posterior plate with round internal structure; single-chambered spermatheca .....3
3. Copulatory canal with complicated folds; accessory gland large.....4  
— Copulatory canal simple, slightly twisted; accessory gland small .....5
4. Accessory gland covered with a lamella (Fig. 47); abdomen with many inclined striae, no large white patches.....*wulingoides*  
— Accessory gland not covered with a lamella (Fig. 43); abdomen with large white patches .....*wulingensis*
5. Fertilisation duct close to posterior plate, almost vertical to distal part of the copulatory canal; accessory gland attached to or on outside of copulatory opening (Fig. 10).....*emeiensis*  
— Fertilisation duct far away from posterior plate, parallel to distal part of copulatory canal; accessory gland located at midpoint of distal part of copulatory canal which is parallel to posterior plate (Fig. 27).....*szechwanensis*

## Males

1. Pedipalps with streak of white setae on dorsum ....2  
— Pedipalps without streak of white setae.....3
2. Streak of white setae dorsally along mid-line of cymbium and tibia; a small outgrowth on bulbus (Fig. 19).....*sinensis*  
— Patches of white setae at apex of femur, along prolateral edge of patella and longitudinal patch dorsally on cymbium; no outgrowth on bulbus (Fig. 24).....*szechwanensis*
3. Embolus very short, spine-shaped (Fig. 30)....*tibialis*  
— Embolus longer .....4

4. Embolus short and thorn-shaped (Figs. 13, 14); tibial apophysis short and forked in lateral view (Fig. 15).....*furcatus*  
— Embolus and tibial apophysis not as above .....5
5. Tibial apophysis stout; embolus finger-shaped (Fig. 36).....*validus*  
— Tibial apophysis much thinner and longer; embolus falcate (Figs. 2-3).....*dactyloides*

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