

Spiders of the Genus *Hersilia* from Taiwan (Araneae: Hersiliidae)

Shyh-Hwang Chen

Department of Life Science, National Taiwan Normal University, 88 Tingchou Road, Section 4, Taipei 116, Taiwan

(Accepted January 5, 2006)

Shyh-Hwang Chen (2007) Spiders of the genus *Hersilia* from Taiwan (Araneae: Hersiliidae). *Zoological Studies* 46(1): 12-25. Spiders of the genus *Hersilia* Audouin from Taiwan were examined and revised. Four species were recognized, including *Hersilia asiatica* Song et Zheng, *H. striata* Wang et Yin, and 2 new species, *H. taiwanensis* Chen, sp. nov. and *H. montana* Chen, sp. nov. *Hersilia asiatica* is widely distributed in the lowlands of the main island of Taiwan. All previous records of *H. savignyi* Lucas from Taiwan are actually *H. striata*. *Hersilia taiwanensis* and *H. montana* belong to the *H. albomaculata* species group that are closely related to *H. okinawaensis* and *H. yaeyamaensis* from the Ryukyus, Japan. Both male and female of each species are either described or redescribed in the present paper based on specimens from Taiwan. A key to the Taiwanese species of *Hersilia* is provided. <http://zoolstud.sinica.edu.tw/Journals/46.1/12.pdf>

Key words: Araneae, Hersiliidae, *Hersilia*, New species, Taiwan.

The Hersiliidae is a small family of flat, highly cryptic, medium-sized spiders, which mostly live on tree trunks or rocky crags. They can easily be recognized by the flattened body, raised eye region, the extremely long posterior spinnerets (Figs. 1-4), and the long legs stretched out radially on tree bark or lichen-covered crags (Chen 1994). The Hersiliidae, commonly called long-spin or two-tailed spiders, is a smaller family comprising 7 genera and 148 species worldwide of which 66 species of 4 genera are known from the Oriental Region (Baehr and Baehr 1993, Platnick 2005). The genus *Hersilia*, comprised of about 58 species worldwide, occurs mainly in the Ethiopian, Oriental, and Australian Regions; *Promurricia* containing only 1 species, *P. depressa* Baehr et Baehr, 1993, is endemic to Sri Lanka (Ceylon); *Murricia* containing about 3 species occurs in India, Sri Lanka, and Singapore; and *Neotama* containing 4 species occurs in India, Sri Lanka, and Indonesia (Sumatra and Java) (Baehr and Baehr 1993, Platnick 1997 2005). Apparently, only the genus *Hersilia* occurs in Taiwan (Chen 1994, Song et al. 1999).

Esaki (1922) first mentioned hersiliid spiders

from Taiwan, and Nakajima (1929) also noted that *H. savignyi* Lucas was also found in Taiwan. However, neither a specimen nor figure was shown in their reports which makes comparison impossible. Subsequently, Saito (1941), Kayashima (1943), Lee (1964), Chu and Okuma (1975), Zhu (1983), Chen (1996 2001), and Song et al. (1999) dealt with the species, *H. savignyi*, in Taiwan. A hand-drawn dorsal view of *H. savignyi* presented by Saito (1941), Kayashima (1943), and Lee (1964), respectively, and photographs of both sexes of *H. savignyi* taken by Chen (2001) without showing the genital organs are all ambiguous. Recently, Chen (1994) recorded a 2nd species of hersiliid spider, *H. asiatica* Song et Zheng, 1982, from Taiwan. Baehr and Baehr (1993) revised the hersiliid spiders from the Oriental and New Guinean region. They provided detailed figures of genital organs for each species including *H. savignyi* which makes comparisons possible.

The hersiliids from a long-term survey of various localities in Taiwan were examined. Four species were recognized. *Hersilia asiatica* is the most common species on the main island of Taiwan. Another widely ranging species, *H. striata*

*To whom correspondence and reprint requests should be addressed. Tel: 886-2-29326234. Fax: 886-2-29312904. E-mail:alchen@ntnu.edu.tw

Wang et Yin, 1985, was found on the plains and in low mountain areas at elevations below 1000 m on the west slopes of the Central Mountain Range and is newly recorded from Taiwan. However, no *H. savigny* was found in any collection. Since the male palps and female epigynes of *H. savigny* resemble those of *H. striata*, and the distribution of *H. savigny* in Taiwan was not confirmed by Baehr and Baehr (1993) or Platnick (1997 2005), I assume that all the previous records of *H. savigny* from Taiwan are misidentifications. The remaining 2 species without a dorsal ridge on the tibia of the male palpus resemble *H. okinawaensis* Tanikawa, 1999 and *H. yaeyamaensis* Tanikawa, 1999 from the Ryukyus, Japan and are new to science. Both the male and female of each species are either described or redescribed in the present paper based on specimens from Taiwan.

MATERIALS AND METHODS

Hersiliid spiders were collected by searching tree bark or lichen-covered rocky crags along trails in various localities of Taiwan, especially in low- and mid-elevation mountain areas. Specimens designated in this paper were preserved in 70% ethanol and deposited in the Arachnological Collection of the Department of Life Science, National Taiwan Normal University, Taipei, Taiwan (NTNUB-Ar). Alcohol-preserved specimens were examined and measured under a stereomicroscope (Leica M3Z) using an ocular micrometer with up to 80x magnification. The female epigynes were dissected and cleaned in a hot 10% KOH solution or in lactic acid at room temperature to examine the inner genital structures. Figures were drawn with the aid of a drawing tube attached to the stereomicroscope (Leica M3Z). All measurements are in millimeters (mm). Measurements of the palps are shown as total length (as the femur, patella, tibia, tarsus). Measurements of the legs are shown as total length (as the femur, patella and tibia, metatarsus 1, metatarsus 2, tarsus) for legs I, II, and IV, and total length (as the femur, patella and tibia, metatarsus, tarsus) for leg III. Measurements of the posterior spinneret are shown as total length (as the basal segment and distal segment). The following abbreviations are used in this paper: AER, anterior eye row; ALE, anterior lateral eye; AME, anterior median eye; AW, anterior width of the median ocular area, measured as the distance of the lateral borders of the anterior median eyes; MOA, median ocular area;

PER, posterior eye row; PLE, posterior lateral eye; PME, posterior median eye; PW, posterior width of the median ocular area, measured as the distance of the lateral borders of posterior median eyes.

SYSTEMATICS

Genus *Hersilia* Audouin, 1826

Hersilia Audouin 1826: 318. For further records see Platnick (2005).

Type species: Hersilia caudata Audouin, 1826.

Diagnosis: Members of the genus *Hersilia* with metatarsi of legs I, II, and IV biarticulated; chelicerae with 3 large promarginal and 6-10 minute retromarginal teeth; 4 dorsal muscular pits; eyes heterogeneous, ALE pearl white and the other eyes black, AER and PER strongly recurved; MOA rectangular, AW equal to PW; dorsal surface of eye area not concave and area between PME and PLE not tuberculate; leg I usually longer than leg II (Baehr and Baehr 1993).

Key to the species of genus *Hersilia* from Taiwan

1. Male 2
 - Female 5
2. Palpal patella with a dorsal ridge bearing several fine spines (Figs. 8, 9, 15, 16) 3.
 - Palpal patella without such a ridge (Figs. 21, 22, 26, 27) 4
3. Expansion of dorsal ridge truncated and heavily sclerotized, covered with many curved spines; brush-like apophysis of tegular apophysis (Figs. 8, 9) *H. asiatica*
 - Expansion of dorsal ridge triangular, covered with many small spines; tegular apophysis without such a brush-like apophysis (Figs. 15, 16) *H. striata*
4. Palpal tibia relatively shorter, tip of embolus not curled, palpal trochanter with a notch (Figs. 26, 27) *H. montana* sp. nov.
 - Palpal tibia relatively longer, embolus curled at the tip, proximal margin of palpal trochanter without a notch (Figs. 21, 22) *H. taiwanensis* sp. nov.
5. Anterior margin of epigynum with a crescent-shaped sclerotized plate (Fig. 6) *H. asiatica*
 - Epigynum without such a sclerotized plate 6
6. Leg I longer than II; both copulatory openings closed and located in center of epigynum (Fig. 13), ventral spermatheca not differentiated (Fig. 14) *H. striata*
 - Leg II longer than I; both copulatory openings widely separated and located at posterior margin of epigynum (Figs. 19, 24), ventral spermatheca distinctive and slender (Figs. 20, 25) 7
7. Dorsal spermatheca elliptical; ventral spermatheca swan-head shaped, not reaching anterior margin of dorsal spermatheca (Fig. 20) *H. taiwanensis* sp. nov.

- Dorsal spermatheca rounded; ventral spermatheca slender reaching to or exceeding anterior margin of dorsal spermatheca (Fig. 25) *H. montana* sp. nov.

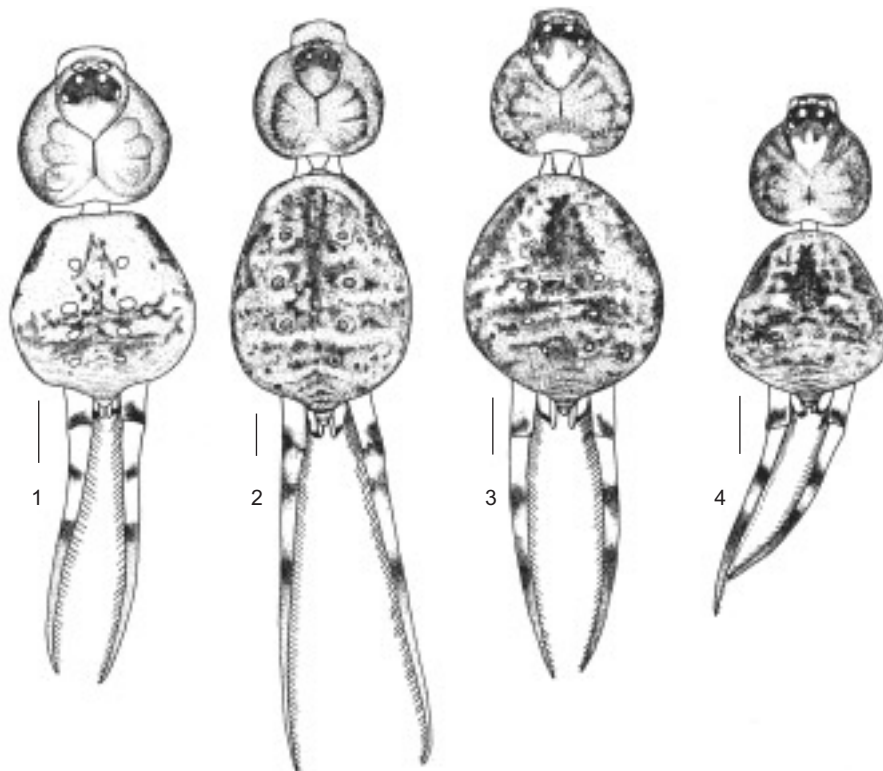
***Hersilia asiatica* Song et Zheng, 1982**

(Figs. 1, 5-12, 22)

Hersilia asiatica Song and Zheng 1982: 40, figs.1-5 (holotype female from Zhaoqing City, Guangdong Prov., China, females and males paratypes from Guangdong and Zhejiang Provs. in Institute of Zoology, Academia Sinica, Beijing, China, not examined); Zhu 1983: 17; Hu 1984: 81, fig. 74; Song 1987: 116, fig. 78; Platnick 1989: 174; Feng 1990: 48, fig. 23, pl. 11. 23; Chen and Zhang 1991: 78, fig. 69; Baehr and Baehr 1993: 25, figs. 20c-f, 54; Chen 1994: 1, fig. 1A-F; Platnick 1997: 236; Song et al. 1999: 80, figs. 32I-J, 33C-D.

Specimens examined: KEELUNG CITY: 1 ♂, 1 ♀, Nuannuan, Hsishih Dam, 100 m, 3 July 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 18725, 18726). TAIPEI CITY: 1 ♀, Hsinyi District, Mt. Elephant, 250 m, 10 Apr. 1999, coll. Yi-Ting Chen (NTNUB-Ar 18711); 1 ♀, Shihlin District,

Yangmingshan, 700 m, 14 Feb. 1983, coll. Shyh-Hwang Chen (NTNUB-Ar 18728); 2 ♀♀, Peitou District, Chunchienyen, 100 m, 13 Oct. 1999, coll. Shyh-Hwang Chen (NTNUB-Ar 8618, 8619); 1 ♀, Wenshan District, Hsienchiyen, 100 m, 27 Mar. 1999, coll. Shyh-Hwang Chen (NTNUB-Ar 8493); 1 ♀, 1 ♂, Wenshan District, Chihnkung, 6 June 1988, coll. Shyh-Hwang Chen (NTNUB-Ar 075a, b); 1 ♀, Wenshan District, Chihnkung 1 Apr. 2004, coll. Shyh-Hwang Chen (NTNUB-Ar 24099); 1 ♀, Wenshan District, campus of National Taiwan Normal University, 30 m, 10 May 1996, coll. Shyh-Hwang Chen (NTNUB-Ar 1261). TAIPEI CO.: 1 ♂, 1 ♀, Shihting, 200 m, 1 June 1996, coll. Shyh-Hwang Chen (NTNUB-Ar 1268, 1269); 1 ♀, Shihting, Mt. Erhko, 450 m, 25 June 2002, coll. Shyh-Hwang Chen (NTNUB-Ar 11641); 1 ♂, Wulai, 250 m, 25 Jan. 1994, coll. Shyh-Hwang Chen (NTNUB-Ar 18729); 1 ♂, Chungo, Yuantung Temple, 100 m, 5 Feb. 2000, coll. Shyh-Hwang Chen (NTNUB-Ar 6693). ILAN CO.: 1 ♀, Tatung, Chilan, 500 m, 31 Mar. 1997, coll. Shyh-Hwang Chen (NTNUB-Ar 7387). HSINCHU CO.: 1 ♂, 1 ♀, Chiunglin, Mt. Feifeng, 250 m, 10 Oct. 1999, coll. Shyh-Hwang Chen (NTNUB-Ar 8608,

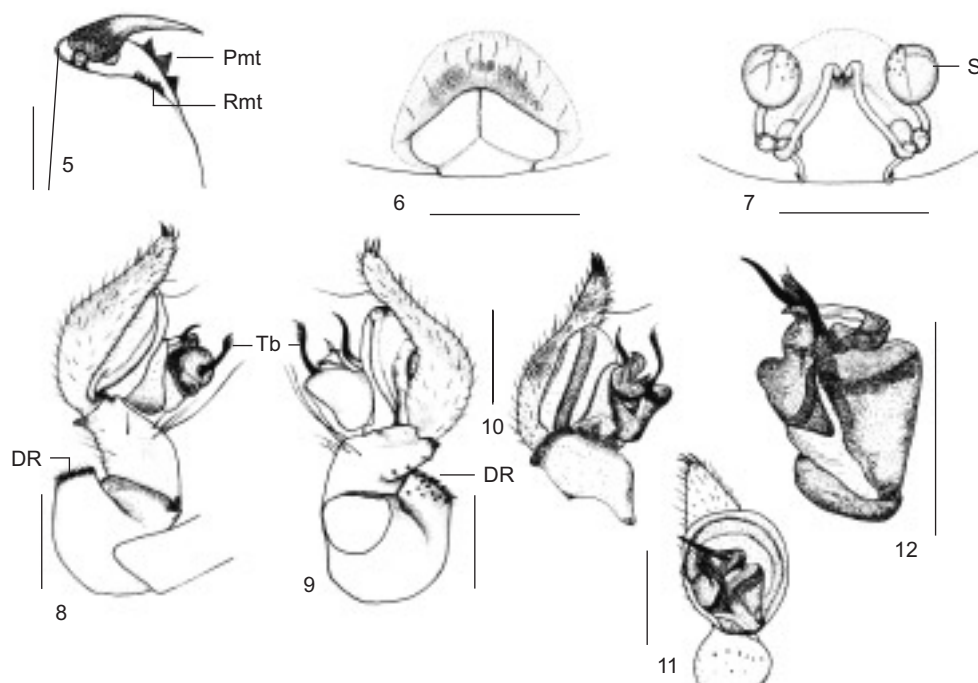


Figs. 1-4. Representatives of the genus *Hersilia* from Taiwan. 1. *Hersilia asiatica* Song et Zheng. (NTNUB-Ar 1269.); 2. *H. striata* Wang et Yin. (NTNUB-Ar 4018.); 3. *H. taiwanensis* Chen sp. nov. (NTNUB-Ar 9230, holotype.); 4. *H. montana* Chen sp. nov. (NTNUB-Ar 7007, holotype). Scale = 1 mm.

8609). TAICHUNG CO.: 2 ♀♀, Tungshih, Ssuchiaolin, 500 m, 17 Jan. 1997, coll. Shyh-Hwang Chen (NTNUB-Ar 1645, 1646); 2 ♀♀, Hoping, Chiapaotai, 1000 m, 21 July 1994, coll. Shyh-Hwang Chen (NTNUB-Ar 18723, 18724); 1 ♀, 2 ♂♂, Hoping, Chiapaotai, 1000 m, 1 Feb. 1997, coll. Shyh-Hwang Chen (NTNUB-Ar 1671-1673). NANTOU CO.: 1 ♂, Tsaotun, Kanshi, 300 m, 26 May 2002, coll. Shyh-Hwang Chen (NTNUB-Ar 4657); 1 ♂, Renai, Wushe, 1000 m, 11 May 1996, coll. Wen-Juen Huang (NTNUB-Ar 1266); 1 ♀, Renai, Kuantaochi, 600 m, 5 Apr. 1988, coll. Shyh-Hwang Chen (NTNUB-Ar 18722). CHIAYI CO.: 1 ♂, Tapu, Chiayi Farm, 300 m, 2 Apr. 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 16372). KAOHSI-UNG CO.: 1 ♀, Maolin, Shanping, 700 m, 28 June 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 18721); 1 ♀, Maolin, Shanping, 700 m, 6 May 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 11549); 1 ♀, Meinung, Shuangchi, 100 m, 6 May 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 12223). PING-TUNG CO.: 1 ♂, Laiyi, 2 Feb. 1994, coll. Shyh-Hwang Chen (NTNUB-Ar 1067). HUALIEN CO.: 1 ♂, 2 ♀♀, Yuli, Antung, 150 m, 22 June 2002, coll. Shyh-Hwang Chen (NTNUB-Ar 11684-11686); 2 ♀♀, Yuli, Antung, 150 m, 24 Apr. 2004, coll.

Shyh-Hwang Chen (NTNUB-Ar 24303, 24304); 2 ♀♀, Shoufeng, Liyutan, 150 m, 2 Mar. 2004, coll. Hon-Zen Wei (NTNUB-Ar 24892, 24893). TAITUNG CO.: 1 ♀, Tungho, Tulan, 200 m, 25 Apr. 2004, coll. Shyh-Hwang Chen (NTNUB-Ar 24351); 2 ♂♂, 2 ♀♀, Tungho, Tungho Farm, 400 m, 29 June 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 18419-18422); 1 ♂, 1 ♀, Chinfeng, Chialan, 3 Jan. 1994, coll. Shyh-Hwang Chen (NTNUB-Ar 1068, 18727); 1 ♂, Tawu, Aikuopu, 70 m, 4 Feb. 1994, coll. Shyh-Hwang Chen (NTNUB-Ar 18720); 1 ♂, Tajen, Hsinhsing, 500 m, 18 Aug. 2002, coll. Shyh-Hwang Chen (NTNUB-Ar 14506).

Diagnosis: *Hersilia asiatica* differs from the other Taiwan species in having a large truncated ridge with short spines on the patella and an elongate brush-like apophysis on the tegular apophysis of the male palpus, typical for members of the *H. asiatica* species group (Baehr and Baehr 1993). It differs from *H. deelemanae* Baehr et Baehr (with its characters given in parentheses), the other species of the same group in Sumatra, in having a larger (smaller) patella, a straight (sinuate) embolus, and a large, dentate (small, non-dentate) median process of tegular apophysis in males and without (with) a sclerotized posterior margin in the



Figs. 5-12. *Hersilia asiatica* Song et Zheng. **5.** Right chelicera of male, inner view; **6.** female epigynum, ventral view; **7.** female genitalia, dorsal view; **8.** male left palpus, retrolateral view; **9.** male left palpus, dorsolateral view; **10.** male left palpus, medial view; **11.** male left palpus, ventral view; **12.** apex of tegular apophysis of male palpus. DR, dorsal ridge of palpal patella; Pmt, promarginal teeth; Rmt, retromarginal teeth; S, spermatheca; Tb, brush-like apophysis of tegular apophysis. Scales: 6-12 = 0.5 mm; 5 = 0.2 mm. (5, 8-12: NTNUB-Ar 1268; 6, 7: NTNUB-Ar 1269).

female epigynum.

Description: Female (NTNUB-Ar 1269). Total length 5.63; cephalothorax length 2.48, width 2.33; abdomen length 3.15, width 2.93. Measurements of palpus, legs and spinnerets: palpus 3.38 (1.20, 0.45, 0.68, 1.05); leg I 18.99 (5.25, 5.93, 4.43, 2.63, 0.75), II 19.96 (5.63, 6.15, 4.58, 2.85, 0.75), III 7.21 (2.25, 2.40, 1.88, 0.68), IV 17.12 (4.73, 4.95, 4.43, 2.33, 0.68); anterior spinneret 0.75, posterior spinneret 5.93 (1.13, 4.80). Carapace (Fig. 1) greenish-brown, with a dark greenish-brown margin on each side and a black eye area; heart-shaped, length longer than width. Head region strongly raised; thoracic groove, cervical and radial grooves prominent. Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.28: 0.16: 0.24: 0.22. MOA length slightly longer than width (0.70: 0.66), AW larger than PW (0.66: 0.58), ALE closer to PLE than to ALE. Clypeus height 1.36 times diameter of AME. Chelicerae (Fig. 5) brown; fang reddish-brown; promargin of the fang groove armed with 3 robust triangular teeth and retromargin with 10 (left) or 9 (right) minute teeth. Endite yellowish-brown, oblong, median concave. Labium light brown, anterior margin with a yellow stripe, broader than long. Sternum yellow, heart-shaped, with an obtuse end between 4th coxae. Palpus yellow, with brown bands on proximal ends of tibia and tarsus, and on the distal end of tarsus. A black claw at tip of palpus. Legs light yellow on coxa, and with grayish-brown bends on remaining segments. Order of leg length II > I > IV > III. Abdomen pentagonal, longer than broad, widest at 2/3 of abdomen. Dorsum grayish-brown, with 4 pairs of small dark-brown sigilla in 2 lines. A dark-brown patch on anterolateral corner of abdomen. Venter light yellow. Anterior spinneret shorter than proximal segment of posterior spinneret. Distal segment of posterior spinnerets 4.25-times length of basal segment. Epigynum (Fig. 6) with a crescent-shaped sclerotized plate on anterior and lateral margins. Vulva (Fig. 7) with 1 large dorsal and 1 small ventral spermatheca, each with many tiny processes on surface.

Male (NTNUB-Ar 1268). Similar to female in shape and coloration. Total length 5.78; cephalothorax length 2.40, width 2.33; abdomen length 3.38, width 2.70. Measurements of palpus, legs, and spinnerets: palpus 3.24 (1.13, 0.53, 0.60, 0.98); leg I 28.96 (7.80, 9.08, 7.50, 3.75, 0.83), II 26.93 (7.13, 8.70, 7.05, 3.30, 0.75), III 7.66 (2.48, 2.55, 2.03, 0.60), IV 22.74 (6.08, 6.83, 6.00, 3.00, 0.83); anterior spinneret 0.60, posterior spinneret 4.81 (0.83, 3.98). Diameters of eyes in ratio,

AME: ALE: PME: PLE = 0.30: 0.16: 0.24: 0.20. Clypeus height 1.2-times diameter of AME. Promargin of fang groove armed with 3 robust triangular teeth and retromargin with 7 (left) or 8 (right) minute teeth. Order of leg length I > II > IV > III. Distal segment of posterior spinnerets 4.8-times length of basal segment. Patella of palpus (Figs. 8, 9) strongly enlarged and a large truncated process with few rows of short spines situated on inner side of process. Tegular apophysis (Figs. 8-12) with an elongate brush-like apophysis; embolus straight and acute.

Variations. Five females and 4 males from Taipei City (Wenshan District) and Taipei County (Shihting, Wulai, and Chungho) were measured. Variations among females are followed by those of males (with the mean in parentheses). Total length 5.63-6.83 (6.34) and 5.18-5.78 (5.41); carapace length 2.33-2.85 (2.55) and 2.10-2.33 (2.23), width 2.33-2.70 (2.45) and 1.88-2.33 (2.12); abdomen length 3.15-4.13 (3.78) and 3.00-3.38 (3.17), width 2.93-3.90 (3.42) and 2.33-2.70 (2.52). Promargin of fang groove armed with 3 robust teeth, and retromargin varying with 8-10 (mostly 8, in 40%) minute teeth in females and 7-9 (mostly 8, in 50%) in males.

Distribution: China (Zhejiang, Jiangsi, and Guangdong Provs.), Thailand, and Taiwan.

Remarks: *Hersilia asiatica* was first recorded from Taiwan by Chen (1994). Although the author was unable to examine the type specimens, both female epigynum and male palpus of Taiwanese materials are basically identical to those figures based on types originally shown by Song and Zheng (1982) and followed by other authors, i.e., Hu (1984) and Song et al. (1999). Although there are some minor differences present between the currently examined Taiwanese materials and the original figures of types in the detailed structures of the vulva in the female holotype and in the shape of the tegular apophysis of the male paratype that is not brush-like, I consider these differences in the original figures to have been much simplified by those authors (Song and Zheng 1982). However, *H. asiatica* having a distinctively crescent-shaped sclerotized plate located in the anterior and lateral margins of the epigynum (Song and Zheng 1982, Hu 1984, Baehr and Baehr 1993, Song et al. 1999) is diagnosable and cannot be confused with any other congeners. In addition, many tiny processes present on the ventral and dorsal spermathecae in the female from Tsin Leon San, Guangdong Prov., China are also confirmed in the present examined specimens from Taiwan; however, the tiny

processes on the ventral one is not so visible. *Hersilia asiatica* (Fig. 29) is most common and widely distributed on the plains and lowlands at elevations below 1000 m in Taiwan.

***Hersilia striata* Wang et Yin, 1985**

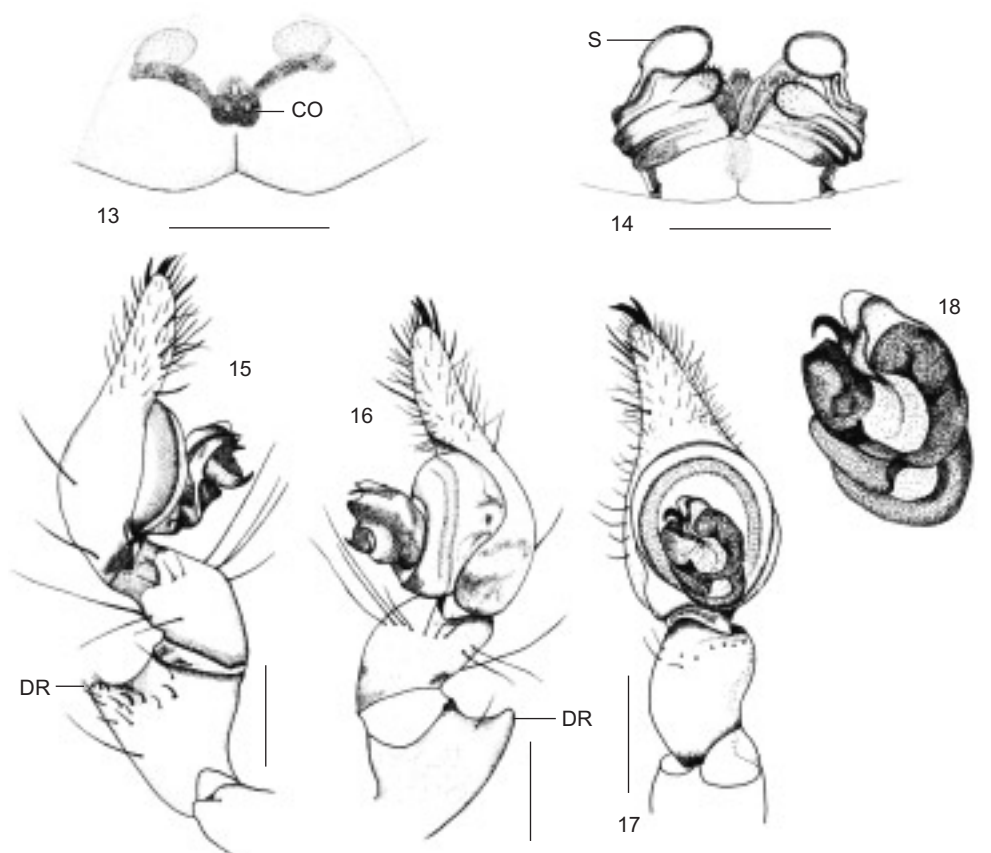
(Figs. 2, 13-18, 29)

Hersilia striata Wang and Yin 1985: 45, fig. 1 (female holotype, male allotype from Mengyang Co., Yunnan Prov. China, females and males paratypes from Mengyang and Simao Cos., Yunnan Prov., China in the Department of Biology, Hunan Teacher's College, Changsha, China, not examined); Song 1987: 117, fig. 79; Platnick 1989: 174; Baehr and Baehr 1993: 37, fig. 26; Platnick 1997: 237; Song et al. 1999: 80, figs. 12C, 32K-L, 33E.

Hersilia savignyi (nec Lucas, 1836): Saito 1941: 62, fig. 69; Kayashima 1943: 8, pl. 9, fig. 1; Lee 1964: 66, fig. 24. I; Yaginuma 1970: 661; Chu and Okuma 1975: 107; Yaginuma 1977: 389; Zhu

1983: 17; Hu 1984: 82, fig. 67. 2; Chen 1996: 126; Song et al. 1999: 80; Chen 2001: 96 (all misidentifications).

Specimens examined: HSINCHU CO.: 1 ♂, 1 ♀, Paoshan, Shanhu, Paoshan Dam, 150 m, 24 June 2005, coll. Shyh-Hwang Chen (NTNUB-Ar 31045, 31046). NANTOU CO.: 2 ♂♂, 2 ♀♀, Yuchih, Lienhuachih, 700 m, 12 July 1988, coll. Shyh-Hwang Chen (NTNUB-Ar 8674-8677); 1 ♀, Lienhuachih, 700 m, 12 July 1984, coll. Shyh-Hwang Chen (NTNUB-Ar 18730); 1 ♂, Puli, Taomikeng, 500 m, 7 Aug. 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 18716); 2 ♂♂, 1 ♀, Tsaotun, Shuangtung, Yuchekeng, 300 m, 23 Feb. 2002, coll. Shyh-Hwang Chen (NTNUB-Ar 4018-4020); 1 ♀, Shuangtung, Kanshi, 300 m, 21 June 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 30071). CHIAYI CO.: 4 ♂♂, 1 ♀, Tapu, Chiayi Farm, 300 m, 27 Sept. 1987, coll. Shyh-Hwang Chen (NTNUB-Ar 18731-18735). TAINAN CO.: 1 ♂, 2 ♀♀, Paiho, Kwanzelin, 600 m, 6 Aug. 1983, coll. Shyh-Hwang Chen (NTNUB-Ar 1123, 1124, 6913);



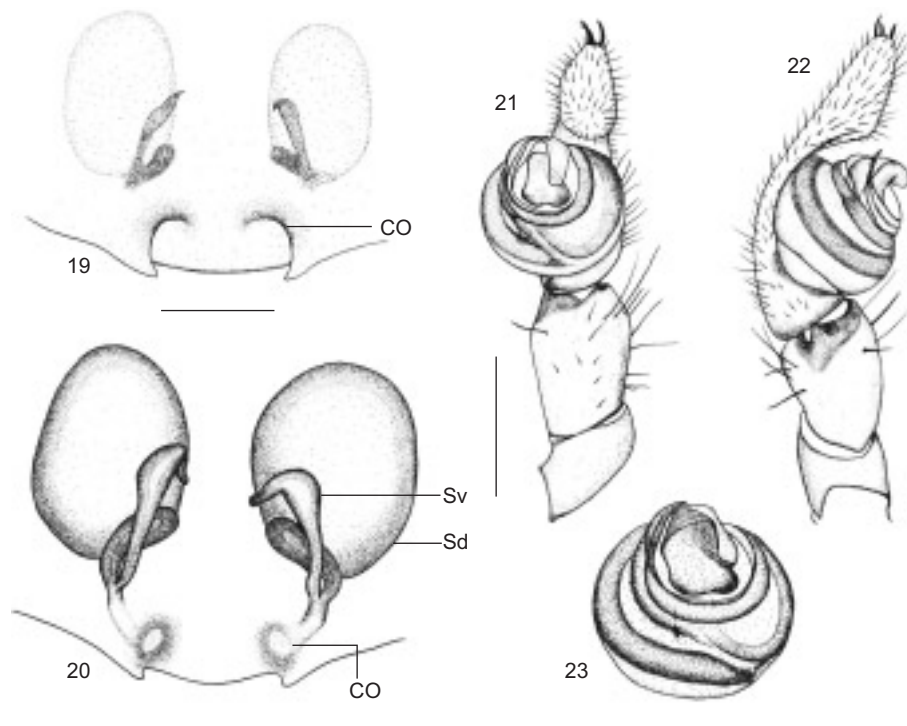
Figs. 13-18. *Hersilia striata* Wang et Yin. 13. Female epigynum, ventral view; 14. female genitalia, dorsal view; 15. male left palpus, retrolateral view; 16. male left palpus, dorsolateral view; 17. male left palpus, ventral view; 18. apex of tegular apophysis of male palpus. CO, copulatory opening; DR, dorsal ridge of palpal patella; S, spermatheca. Scales = 0.5 mm. (13, 14: NTNUB-Ar 4018; 15-18: NTNUB-Ar 4019).

2 ♂♂, 4 ♀♀, Tanei, Choumalai, 50 m, 28 Aug. 2001, coll. Shyh-Hwang Chen (NTNUB-Ar 10968-10973).

Diagnosis: *Hersilia striata* differs from other Taiwanese species in having a large triangular dorsal ridge with several short spines on the male palpal patella, leg I slightly longer than II in both sexes, and having an elliptical spermatheca, a large bulbous sac at the base, and 2 closely adjoining median genital openings in the female vulva, thus belonging to the *H. savignyi* species group (Baehr and Baehr 1993). The triangular dorsal ridge in the male palpal patella and a crescent stripe on each side of the median genital openings visible externally in female *H. striata* most resemble those in *H. simplicipalpis* Baehr et Baehr, *H. nentwigi* Baehr et Baehr, and *H. balienensis* Baehr et Baehr among the *savignyi* species group, but can be distinguished from these species in having a relatively simple bulbous sac from which ducts on either side adjoin in the middle to a bulbous thickening and the presence of 2 adjoining copulatory openings in the female vulva.

Description: Female (NTNUB-Ar 4018). Total length 10.05: cephalothorax length 3.30, width

3.38; abdomen length 6.75, width 4.80. Measurements of palpus, legs and spinnerets: palpus 5.71 (1.88, 0.90, 0.98, 1.95); leg I 37.14 (9.90, 11.63, 9.00, 5.48, 1.13), II 34.81 (9.30, 9.68, 9.30, 5.40, 1.13), III 11.64 (3.83, 3.60, 3.23, 0.98), IV 31.13 (8.25, 9.00, 8.25, 4.43, 1.20); anterior spinneret 1.13, posterior spinneret 10.20 (1.50, 8.70). Carapace (Fig. 2) grayish-brown, bordered with a narrow dark greenish-brown margin on each side, a black eye area, a transverse narrow white band situated between AMEs and PMEs. Prosoma rounded, length almost as long as width. Head region strongly raised; thoracic and cervical grooves deep and prominent, radial grooves distinctive. Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.36: 0.20: 0.34: 0.28. MOA: length as great as width (0.76), AW slightly larger than PW (0.76: 0.72). ALE closer to PLE than to ALE. Clypeus height 1.8 times diameter of AME. Chelicerae brown; fang reddish-brown, dark brown near base; promargin of fang groove armed with 3 robust triangular teeth and retromargin with 7 (left) or 8 (right) minute teeth. Endite yellowish-brown. Labium light brown, with a yellow stripe on front margin, width greater than length. Sternum yellow,



Figs. 19-23. *Hersilia taiwanensis* Chen, sp. nov. **19.** Female epigynum, ventral view; **20.** female genitalia, ventral view; **21.** male left palp, ventral view; **22.** male left palp, dorsolateral view; **23.** central part of male left palp. CO, copulatory opening; Sd, dorsal spermatheca; Sv, ventral spermatheca. Scales: 19, 20 = 0.2 mm; 21-23 = 0.5 mm. (19, 20: NTNUB-Ar 9231, paratype; 21-23: NTNUB-Ar 9229, paratype).

heart-shaped, width slightly greater than length, with an obtuse end between 4th coxae. Palpus yellow, with dark-brown bands on proximal ends of tibia and tarsus, and on distal end of tarsus. A black claw at tip of palpus. Legs light yellow on coxa, and with grayish-brown bands on remaining segments, order of leg length I > II > IV > III. Abdomen ovoid, longer than broad, widest near middle. Dorsum grayish-brown, with 4 pairs of small dark-brown sigilla in 2 lines. A dark-brown patch along anterolateral side of abdomen. Venter light yellow. Anterior spinneret shorter than proximal segment of posterior spinneret. Distal segment of posterior spinnerets 5.80-times length of basal segment. Epigynum (Fig. 13) poorly sclerotized, with a crescent stripe on each side of genital opening visible through tegument. Vulva (Fig. 14) with an elliptical spermatheca, a large bulbous sac at base, and a united median genital opening.

Male (NTNUB-Ar 4019). Similar to female in shape and coloration. Total length 7.20: cephalothorax length 3.00, width 2.85; abdomen length 4.20, width 2.93. Measurements of palpus, legs, and spinnerets: palpus 4.59 (1.73, 0.75, 0.68, 1.43); leg I 50.42 (12.23, 16.13, 13.95, 6.23, 1.88), II 40.89 (9.45, 12.98, 11.78, 5.63, 1.05), III 14.34 (3.90, 6.08, 3.53, 0.83), IV 35.63 (8.18, 12.60, 9.75, 4.20, 0.90); anterior spinneret 0.90, posterior spinneret 8.63 (1.05, 7.58). Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.36: 0.16: 0.26: 0.24. Clypeus height 1.5 times diameter of AME. Retromargin of fang groove armed with 6 (left) or 7 (right) minute teeth. Order of leg length I > II > IV > III. Distal segment of posterior spinnerets 7.22-times length of basal segment. Palpal patella (Figs. 15, 16) strongly enlarged and a large triangular process with few rows of short spines situated on inner side of process. Palpal patella and tibia forming an S-shaped configuration. Embolus (Figs. 17, 18) dark brown, slightly curved, arising behind regular apophysis.

Variations. Five females and 5 males from Nantou Co. (Tsaotun, Puli, and Yuchih) were measured. Variations among females are followed by those of males (with the mean in parentheses). Total length 8.03-10.05 (8.84) and 7.20-8.03 (7.52); carapace length 2.93-3.38 (3.21) and 2.93-3.23 (3.05), width 2.85-3.38 (3.09) and 2.70-2.93 (2.82); abdomen length 5.10-6.75 (5.63) and 4.05-4.95 (4.47), width 3.38-4.80 (3.84) and 2.70-3.23 (2.93). Promargin of fang groove armed with 3 robust teeth, and retromargin varying with 6-8 (mostly 7, in 67%) min teeth in females and 5-8 (mostly 7, in 50%) in males.

Distribution: China (Yunnan Prov.), Thailand, Burma, Indonesia (Sumatra and Java), and Taiwan (new record).

Remarks: Although the author was unable to examine the types, specimens examined from Taiwan in the present paper are undoubtedly identical to *H. striata* Wang et Yin when compared with figures of types from China (Wang and Yin 1985, Song et al. 1999) and figures of materials from Pranburi, Thailand (Baehr and Baehr 1993). Although Baehr and Baehr (1993) described the female epigynum with only 1 median copulatory opening, 2 openings can clearly be seen in a shallow hole and separated by a sclerotized septum in Taiwanese materials as well as in the figure of types (see Song et al. 1999: 82, fig. 32L). Since the palpal organs of males from populations of Taiwan, Thailand, and Yunnan are all identical, I consider them to be conspecific. Thus, *H. striata* is a newly recorded spider in Taiwan. Saito (1941) considered *H. savignyi* Lucas to be widely distributed in southern Asia including Taiwan. Lee (1964) also noted that *H. savignyi* was common in central Taiwan. However, I have never seen any *H. savignyi* in Taiwan. All vouchers of *H. savignyi* of Saito (1941), Kayashima (1953), and Lee (1964) have presumably been lost. Photographs of *H. savignyi* taken by the author (Chen 2001) were indeed of *H. striata*. Since *H. savignyi* and *H. striata* belong to the *savignyi* species group, they all have the "S-shaped palpal tibia plus patella" in the male palpus and have similar external features that allowed them to easily be confused by the early students. Geographically, *H. savignyi* is restricted in South Asia from India to Burma including Sri Lanka and Nepal, and *H. striata* is parapatrically distributed in Southeast Asia including Burma, Thailand, Indonesia (Sumatra and Java), and China (Yunnan) (Baehr and Baehr 1993). Thus, the occurrence of *H. savignyi* in Taiwan is unlikely. Judging from the absence of *H. savignyi* from Taiwan, similarities in the external appearance and the differential geographic distributions between both species, I concluded that all previous records of *H. savignyi* in Taiwan were based on misidentifications of *H. striata*. In addition, the range of *H. savignyi* including the Philippines listed in Platnick (1997 2005) is erroneous. Barrion and Litsinger (1995) recorded *H. clathrata* Thorell from the Philippines. *Hersilia clathrata* Thorell was treated as a junior synonym of *H. savignyi* Lucas by Baehr and Baehr (1993) which was the reason why Platnick (1997 2005) included the Philippines in the range of *H. savignyi*. However, *H. clathrata*

nec Thorell redescribed by Barrion and Litsinger (1995) showing a dorsal ridge with 5 or 6 stout spines (or hairs) on the palpal tibia and 5-8 spines on the apex of the cymbium in the male palpus most resembles *H. tibialis* Baehr and Baehr. Undoubtedly, it is a member of the *H. pectinata* species group (Baehr and Baehr 1993), so cannot be counted as *H. savignyi*. The status of *H. clathrata* (sensu Barrion and Litsinger 1995), regardless of whether it is identical to *H. tibialis* Baehr and Baehr or is an undescribed species, requires further detailed comparisons. *Hersilia striata* is the largest hersiliid spider in Taiwan. Unlike *H. asiatica*, *H. striata* (Fig. 29) is most common and mainly distributed in low-elevation mountain areas of central and southwestern Taiwan and is rare in northern Taiwan; it has never been found in eastern Taiwan. The only northern population of *H. striata* found in Taiwan was at Paoshan, Hsinchu Co.

***Hersilia taiwanensis* Chen, sp. nov.**

(Figs. 3, 19-23, 30)

Type series: Holotype: ♀, Huangtieten, Shihting, Taipei Co., 250 m, 17 Apr. 1999, coll. Shyh-Hwang Chen (NTNUB-Ar 9230). Paratypes: 3 ♂♂, 3 ♀♀, same data as in holotype (NTNUB-Ar 9229, 9231-9235).

Other specimens examined: TAIPEI CO.: 1 ♀, Pinglin, Chingshan Bridge, 300 m, 14 July 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 16849); 1 ♂, 1 ♀, Shihting, Huangtieten, 400 m, 15 Apr. 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 18747, 18748); 1 ♂, 1 ♀, Shihting, Nantzekeng, 230 m, 17 Apr. 2000, coll. Shyh-Hwang Chen (NTNUB-Ar 10011, 10012); 1 ♀, Shihting, Feitsui Reservoir, 170 m, 8 Apr. 2000, coll. Shyh-Hwang Chen (NTNUB-Ar 6959); 1 ♂, Hsintien, Yinghotung, 100 m, 9 Mar. 2002, coll. Shyh-Hwang Chen (NTNUB-Ar 10587); 3 ♂♂, 1 ♀, Yinghotung, 150 m, 1 May 1982, coll. Shyh-Hwang Chen (NTNUB-Ar 13569-3572); 2 ♂♂, 1 ♀, Hsintien, Szukanshui, 200 m, 29 Mar. 2004, coll. Shyh-Hwang Chen (NTNUB-Ar 25002-25004); 1 ♂, 3 ♀♀, Wulai, 200 m, 20 Mar. 1994, coll. Wen-Jean Huang (NTNUB-Ar 18743-18746); 3 ♀♀, Pingchi, Chingtung, 300 m, 1 June 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 18559-18561). HSINCHU CO.: 1 ♂, 3 ♀♀, Peipu, Mt. Wutzu, 850 m, 3 Apr. 1997, coll. Shyh-Hwang Chen (NTNUB-Ar 7689-7692); 1 ♂, 1 ♀, Mt. Wutzu, 850 m, 21 Sept. 1996, coll. Shyh-Hwang Chen (NTNUB-Ar 18749, 18750). NANTOU CO.: 1 ♀, Renai, Kuantaochi, 750 m, 5 Apr. 1988, coll.

Shyh-Hwang Chen (NTNUB-Ar 061). KAOHSI-UNG CO.: 1 ♀, Maolin, Shanping, 700 m, 22 July 1996, coll. Shyh-Hwang Chen (NTNUB-Ar 1331); 1 ♀, Shanping, 700 m, 6 May 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 12637); 1 ♂, Shanping, 700 m, 13 July 1983, coll. Shyh-Hwang Chen (NTNUB-Ar 069). TAITUNG CO.: 1 ♀, Tungho, Tungho Farm, 400 m, 29 June 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 18455).

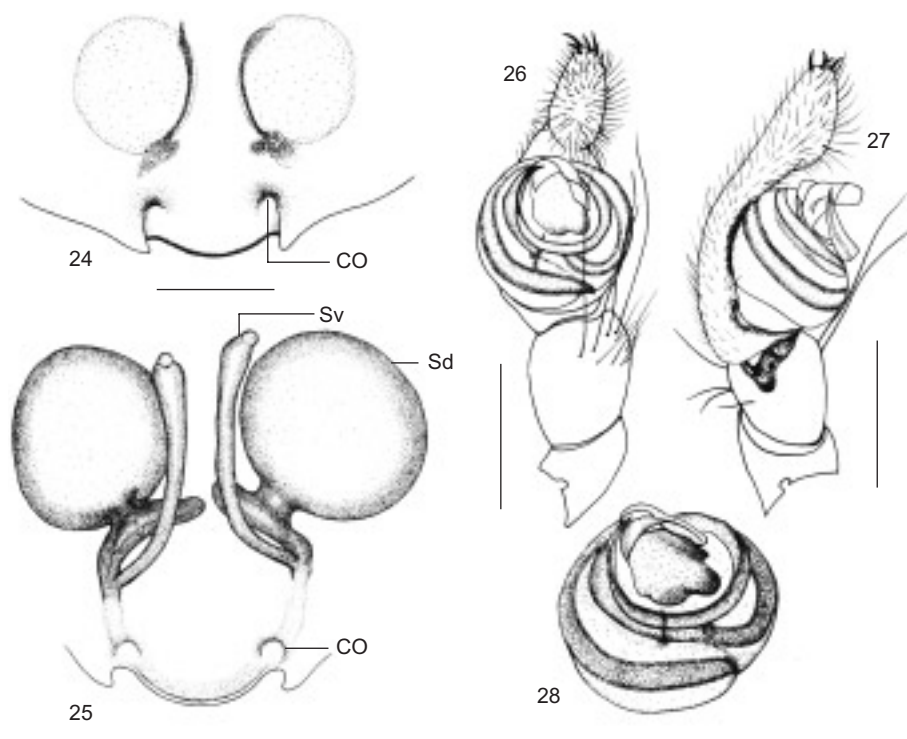
Diagnosis: *Hersilia taiwanensis* sp. nov. is most allied to the other new species, *H. montana* sp. nov., in Taiwan, and *H. okinawaensis* Tanikawa and *H. yaeyamaensis* Tanikawa in the Ryukyus, Japan. These 4 species have a male palpus without spinose ridges on the tibia or patella, a simple, excavate tegular apophysis, and a free, narrow, curved embolus, while females have a simple, less-sclerotized epigynum, and the vulva has a less-coiled copulatory duct and 2 well-separated spermathecae. They belong to the *H. albomaculata* species group (Baehr and Baehr 1993) but differ from other members within the species group in sharing a large ovoid or elliptical dorsal spermatheca and a slender ventral one and having a curved instead of a coiled copulatory duct in the female vulva. The ventral spermathecae of *H. taiwanensis* and *H. yaeyamaensis* are swan-head shaped and differ from those of *H. montana* and *H. okinawaensis* in having slender ventral spermathecae. *Hersilia taiwanensis* differs from *H. yaeyamaensis* (with characters in parentheses) by having a relatively large dorsal spermatheca and the shorter ventral one not reaching the distal end of the dorsal spermatheca (smaller dorsal spermatheca, and the ventral one extending far beyond the dorsal one) in the female vulva and having a straight (bent) tip to the embolus.

Description: Female (holotype). Total length 6.08: cephalothorax length 2.33, width 2.10; abdomen length 3.75, width 3.38. Measurements of palpus, legs, and spinnerets: palpus 3.46 (1.20, 0.45, 0.68, 1.13); leg I 19.44 (5.40, 6.08, 4.20, 3.08, 0.68), II 19.51 (4.88, 6.15, 4.50, 3.23, 0.75), III 6.61 (2.10, 2.18, 1.73, 0.60), IV 16.82 (4.43, 4.88, 4.13, 2.55, 0.83); anterior spinneret 0.68, posterior spinneret 5.03 (1.05, 3.98). Carapace (Fig. 3) greenish-brown bordered with a dark greenish-brown stripe on both sides, a black patch on eye area, and a white patch between cervical groove and eye area. Prosoma heart-shaped, a little longer than broad; head region raised with shallow cervical grooves; thoracic groove longitudinal, deep and distinctive; radial grooves shallow, distinctive. Diameters of eyes in ratio, AME: ALE:

PME: PLE = 0.28: 0.14: 0.28: 0.20. MOA length as great as width (0.60), AW (0.60) slightly larger than PW (0.58). ALE closer to PLE than to ALE. Clypeus height 0.79 times diameter of AME. Chelicerae greenish-brown; fang reddish-brown, dark brown near base; promargin of fang groove armed with 3 robust triangular teeth and retromargin with 8 (left) or 9 (right) minute teeth on a sclerotized ridge. Oblong endite yellowish-brown. Labium yellowish-brown, broader than long. Sternum yellow, heart-shaped, with an obtuse end between 4th coxae. Palpus and legs with well-defined greenish brown bands. A black claw at tip of palpus. Order of leg length $II > I > IV > III$. Except for leg III having 1 metatarsus, the remaining legs composed of 2 metatarsal segments. Abdomen ovoid, longer than broad and widest at 2/3 of abdomen. Dorsum dull greenish-brown, strongly mottled, anterolateral border well defined, and 4 pairs of small black sigilla. Venter light yellow. Anterior spinneret shorter than proximal segment of posterior spinneret. Distal segment of posterior spinnerets 3.79 times length of basal segment. Epigynum (Fig. 19) simple, weakly sclerotized, spermathecae visible through tegument,

and copulatory openings on both sides. Vulva (Fig. 20) with a curved copulatory duct, 2 well-separated spermathecae; dorsal spermatheca large, elliptical; ventral spermatheca slender, apex swan-head shaped, not reaching distal end of dorsal spermatheca.

Male (NTNUB-Ar 9229). Similar to female in shape and coloration. Total length 4.81: cephalothorax length 2.18, width 2.03; abdomen length 2.63, width 2.18. Measurements of palpus, legs, and spinnerets: palpus 3.01 (1.20, 0.45, 0.38, 0.98); leg I 29.12 (7.50, 9.23, 7.58, 3.98, 0.83), II 26.86 (6.90, 8.33, 6.90, 3.98, 0.75), III 7.66 (2.48, 2.48, 2.10, 0.60), IV 21.99 (5.63, 6.60, 6.08, 2.93, 0.75); anterior spinneret 0.60, posterior spinneret 4.88 (0.98, 3.90). Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.24: 0.14: 0.24: 0.18. Clypeus height as great as diameter of AME. Retromargin of fang groove armed with 8 (left) or 9 (right) minute teeth. Order of leg length $I > II > IV > III$. Distal segment of posterior spinneret 3.98-times length of basal segment. Tibia and patella of palpus (Figs. 21, 22) without spinose ridges; palpal organ (Figs. 22, 23) with a simple, excavate tegular apophysis, and with a free, narrow, curved



Figs. 24-28. *Hersilia montana* Chen, sp. nov. **24.** Female epigynum, ventral view; **25.** female genitalia, ventral view; **26.** male left palpus, ventral view; **27.** male left palpus, dorsolateral view; **28.** central part of male left palpus. CO, copulatory opening; Sd, dorsal spermatheca; Sv, ventral spermatheca. Scales: 24, 25 = 0.2 mm; 26-28 = 0.5 mm. (24: NTNUB-Ar 7009, paratype; 25: NTNUB-Ar 7007, holotype; 26-28: NTNUB-Ar 18751, paratype).

embolus.

Variations. Variations among all type specimens given for females are followed by those of males (mean in parentheses). Total length 5.93-6.30 (6.08) and 4.81-5.48 (5.03); carapace length 2.33-2.55 (2.44) and 2.18-2.33 (2.23), width 2.10-2.25 (2.20) and 2.03-2.10 (2.05); abdomen length 3.53-3.75 (3.64) and 2.63-3.15 (2.80), width 3.38-3.68 (3.46) and 2.10-2.40 (2.23). Promargin of fang groove armed with 3 robust triangular teeth, and retromargin varying with 6-9 (mostly 9, in 75%) minute teeth in females and 8-10 (mostly 9, in 50%) in males.

Etymology: The specific name is a noun in apposition, and refers to the main island of Taiwan where the new species was found.

Distribution: Taiwan.

Remarks: *Hersilia taiwanensis* sp. nov. (Fig.

23) occurs mainly on the plains and lowlands at elevations below 1000 m in Taiwan where it occurs sympatrically with *H. asiatica* at some localities. However, both species have never been found on the same tree trunk, and more frequently *H. taiwanensis* was found on shady, lichen-covered rocky crags.

***Hersilia montana* Chen, sp. nov.**

(Figs. 4, 24-28, 30)

Type series: Holotype: ♀, Alishan, Chiayi Co., 2200 m, 26 Oct. 1996, coll. Shyh-Hwang Chen (NTNUB-Ar 7007). Paratypes: 3 ♀♀, data same as in holotype (NTNUB-Ar 7008 - 7010); 3 ♂♂, 2 ♀♀, locality same as in holotype, 18 Sept. 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 18751-18755).

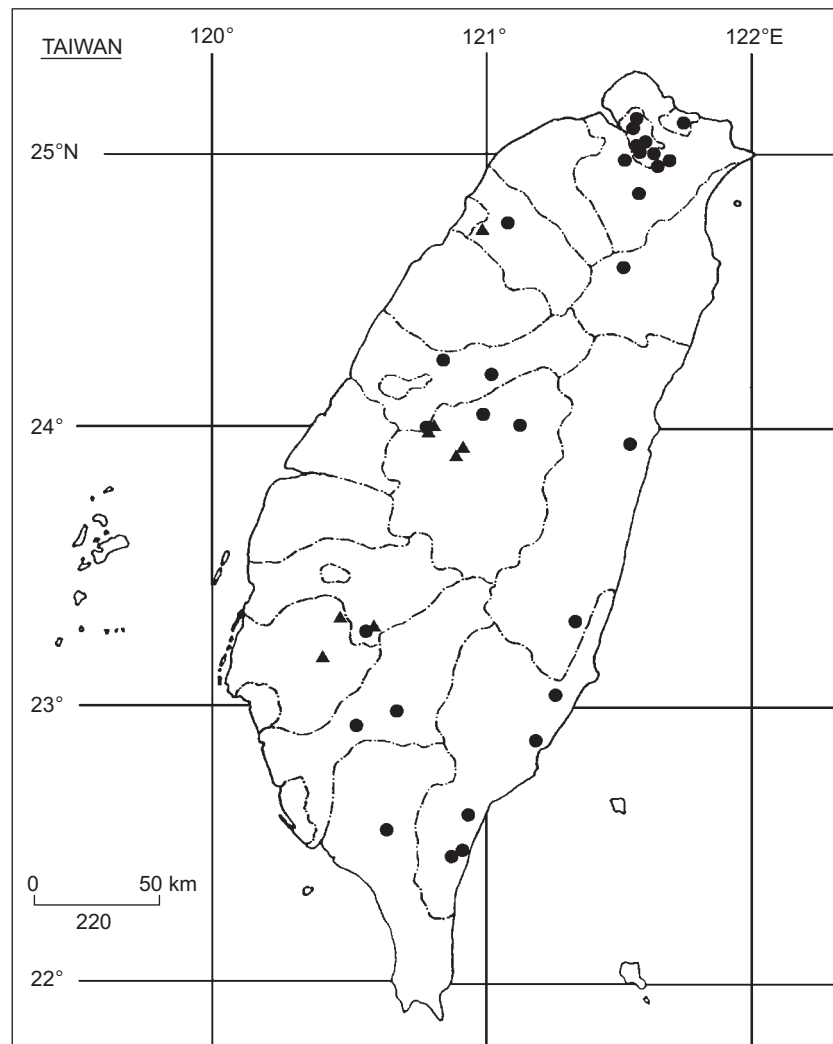


Fig. 29. Distributions of *Hersilia asiatica* Song et Zheng (circles) and *H. striata* Wang et Yin (triangles) in Taiwan.

Other specimens examined: TAOYUAN CO.: 1 ♂, 6 ♀♀, Fuhsing, Paling, 1500 m, 23 Apr. 1994, coll. Shyh-Hwang Chen (NTNUB-Ar 18756-18762). TAICHUNG CO.: 1 ♀, Hoping, Chiapaotai, 1550 m, 31 Jan. 1997, coll. Shyh-Hwang Chen (NTNUB-Ar 1710); 1 ♀, Hoping, Anmashan, 2200 m, 2 Aug. 2003, coll. Shyh-Hwang Chen (NTNUB-Ar 18639). NANTOU CO.: 1 ♀, Luku, Chitou, 1150-1250 m, 12 Feb. 1997, coll. Shyh-Hwang Chen (NTNUB-Ar 1728); 1 ♀, Luku, Fenghuangku, 700 m, 17 Sept. 1995, coll. Shyh-Hwang Chen (NTNUB-Ar 7011); 1 ♂, 3 ♀♀, Luku, Chitou, 1000 m, 26 July 1991, coll. Shyh-Hwang Chen (NTNUB-Ar 8687-8690); 1 ♀, Luku, Chitou, 1150 m, 10 Dec. 1983, coll. Shyh-Hwang Chen (NTNUB-Ar 18763). CHIAYI CO.: 1 ♂, 2 ♀♀, Alishan, 2200 m, 12 Feb. 1997, coll. Wen-Juen Huang (NTNUB-Ar 7860-7862). PINGTUNG CO.:

1 ♀, Chunjih, Tahanshan, 1450 m, 4 Sept. 1993, coll. Shyh-Hwang Chen (NTNUB-Ar 10539); 1 ♀, Wutai, Songshan, 2000 m, 26 June 2003, coll. Ya-Hui Chen (NTNUB-Ar 17815). TAITUNG CO.: 1 ♀, Haituan, 7 km SW Wulu, 1500 m, 26 June 2004, coll. Shyh-Hwang Chen (NTNUB-Ar 24713).

Diagnosis: *Hersilia montana* sp. nov. is a member of the *H. albomaculata* species group (see diagnosis of *H. taiwanensis*). It is most allied to *H. taiwanensis* sp. nov. in Taiwan, and *H. okinawaensis* Tanikawa and *H. yaeyamaensis* Tanikawa in the Ryukyus, Japan. *Hersilia montana* differs from *H. taiwanensis* and *H. yaeyamaensis* (with characters in parentheses) in having a slender (swan-head shaped) ventral spermatheca. It also differs from *H. okinawaensis* (with characters in parentheses) in having a rounded (elliptical) dorsal spermatheca and a long ventral sper-

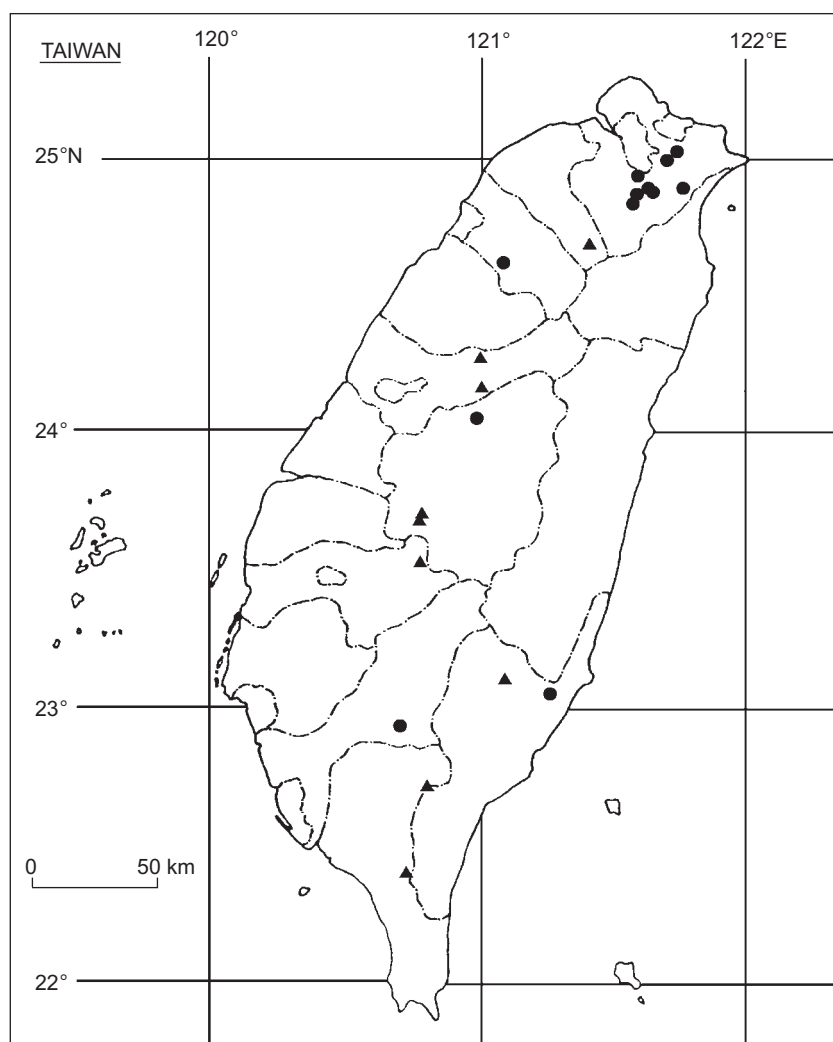


Fig. 30. Distributions of *Hersilia taiwanensis* Chen, sp. nov. (circles) and *H. montana* Chen, sp. nov. (triangles) in Taiwan.

matheca, wider-most near the apex, with a short and rounded apex that reaches or extends well beyond the distal end of the dorsal one (ventral spermatheca short, widest in the middle with a long, tapering apex, not reaching the distal end of the dorsal one).

Description: Female (holotype). Total length 4.88: cephalothorax length 2.10, width 2.10; abdomen length 2.78, width 2.78. Measurements of palpus, legs and spinnerets: palpus 2.93 (1.20, 0.38, 0.45, 0.90); leg I 15.68 (4.20, 4.80, 3.38, 2.55, 0.75), II 16.37 (4.13, 5.03, 3.68, 2.78, 0.75), III 5.78 (1.95, 1.88, 1.35, 0.60), IV 14.79 (3.83, 4.43, 3.45, 2.33, 0.75); anterior spinneret 0.60, posterior spinneret 4.13 (0.90, 3.23). Carapace (Fig. 4) greenish-brown bordered with dark greenish-brown on both sides, a black patch on eye area, a white patch between cervical groove and eye area. Prosoma heart-shaped, length as great as width; head region raised; cervical and radial grooves shallow, distinctive. Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.24: 0.16: 0.24: 0.20. MOA length as great as width (0.54), AW as long as PW (0.54). ALE closer to PLE than to ALE. Clypeus height equals diameter of AME. Chelicerae brown, anterior surface dark brown; fang reddish-brown with a dark-brown base; promargin of the fang groove armed with 3 robust triangular teeth and retromargin with 7 (left) or 8 (right) minute teeth. Endite and labium light brown, with a yellow stripe on each front margin. Sternum yellow, heart-shaped, with an obtuse end between 4th coxae. Palpus yellow, with greenish-brown bands on each segment and a brown distal end to tarsus. A black claw at tip of palpus. Legs and posterior spinneret yellow, with greenish-brown bands. Order of leg lengths II > I > IV > III. Except for leg III having 1 metatarsus, the remaining legs composed of 2 metatarsal segments. Abdomen pentagonal, length as great as width and widest at about 2/3 of abdomen. Dorsum greenish-brown, with 4 pairs of small dark-brown sigilla, a dark greenish-brown patch on anterolateral margin of abdomen and a pair of white spots circling 2nd sigilla. Venter light yellow. Anterior spinneret shorter than proximal segment of posterior spinneret. Distal segment of posterior spinnerets 3.59-times length of basal segment. Epigynum (Fig. 24) simple, less sclerotized, spermathecae visible through tegument, and copulatory openings well separated on both sides. Vulva (Fig. 25) with a curved copulatory duct, 2 well-separated spermathecae; dorsal spermatheca large, rounded; ventral spermatheca slender, widest near apex,

reaching or extending well beyond distal end of dorsal spermatheca.

Male (NTNUB-Ar 18751). Similar to female in shape and coloration. Total length 4.50: cephalothorax length 2.10, width 1.95; abdomen length 2.40, width 2.10. Measurements of palpus, legs, and spinnerets: palpus 2.93 (1.20, 0.45, 0.38, 0.90); leg I 22.81 (5.78, 6.90, 5.85, 3.45, 0.83), II 22.51 (5.63, 7.05, 5.70, 3.30, 0.83), III 6.68 (2.10, 2.10, 1.80, 0.68), IV 18.38 (4.80, 5.40, 4.73, 2.70, 0.75); anterior spinneret 0.68, posterior spinneret 4.05 (0.90, 3.15). Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.24: 0.12: 0.24: 0.20. Clypeus height 0.67-times diameter of AME. Retromargin of fang groove armed with 6 (left) or 7 (right) minute teeth. Order of leg lengths I > II > IV > III. Distal segment of posterior spinnerets 3.50-times length of basal segment. Tibia and patella of palpus (Figs. 26, 27) without spinose ridges; palpal organ (Fig. 28) with a simple, excavate tegular apophysis, and with a free, narrow, curved embolus.

Variations. Variations among all type specimens given for females are followed by those of males (with mean in parentheses). Total length 4.80-5.63 (5.15) and 4.28-4.58 (4.45); carapace length 1.95-2.25 (2.14) and 1.95-2.10 (2.03), width 1.88-2.18 (2.04) and 1.80-1.95 (1.85); abdomen length 2.70-3.45 (3.02) and 2.33-2.55 (2.43), width 2.78-3.53 (3.04) and 1.88-2.10 (2.03). Retromargin of fang groove varying with 7 or 8 (mostly 7, in 80%) minute teeth in females and 6 or 7 (mostly 7, in 80%) in males.

Etymology: The specific name refers to the mountainous area of Taiwan where the new species was found. The word "montana" means "mountain".

Distribution: Taiwan.

Remarks: *Hersilia montana* sp. nov. (Fig. 30) occurs mainly in moderate and high montane regions at elevations above 1000 m in Taiwan and occurs parapatrically with *H. taiwanensis*. Both species have never been found at the same locality. *Hersilia montana* was found on tree trunks, shady and lichen-covered rocky crags, or even on the outer walls of buildings.

Acknowledgments: I sincerely thank Yi-Ting Chen, Hon-Zen Wei, Wen-Juen Huang, Ya-Hui Chen, and Ya-Ching Yang for field assistance. This work was supported in part by grants (NSC91-2621-B-003-004 and NSC92-2621-B-003-004) from the National Science Council and (91AS-2.4.1-EI-W1 (03-2), 92AS-2.4.2-EI-W1 (03-

2), and 93AS-2.4.2-EI-W1-2) from the Taiwan Endemic Species Research Institute, Council of Agriculture, Executive Yuan, Taiwan.

REFERENCES

- Audouin V. 1826. Explication sommaire des Planches d'Arachnides de l'Egypte et de la Syrie, publiees par Jules-Cesar Savigny, membre de l'Institut; offrant un expose des caracteres naturels des genres avec la distinction des especes. In JC Savigny and V Audouin eds. Description de l'Egypte. Histoire Naturelle, Paris **1**: 1-339.
- Baehr M, B Baehr. 1993. The Hersiliidae of the Oriental Region including New Guinea. Taxonomy, phylogeny, zoogeography (Arachnida, Araneae). Spixiana **19 (Supplement)**: 1-96.
- Barrion AT, JA Litsinger. 1995. Riceland spiders of South and Southeast Asia. Wallingford, UK: CAB International.
- Chen SH. 1994. A new record of spider, *Hersilia asiatica* Song and Zheng, from Taiwan (Araneae: Hersiliidae). Biol. Bull. Natl. Taiwan Normal Univ. **29**: 1-3.
- Chen SH. 1996. A checklist of spiders in Taiwan. J. Taiwan Mus. **39**: 123-155. (in Chinese)
- Chen SH. 2001. A guide to common spiders of Taiwan. Taipei, Taiwan: Council of Agriculture. (in Chinese)
- Chen ZF, ZH Zhang. 1991. Fauna of Zhejiang: Araneida. Hangzhou, China: Zhejiang Science and Technology Publishing House. (in Chinese)
- Chu YI, C Okuma. 1975. A check list of spiders in Taiwan (II). J. Taiwan Mus. **18**: 101-119.
- Esaki T. 1922. On the collections traveled in Formosa. Zool. Mag. Jpn. **34**: 38. (in Japanese)
- Feng ZQ. 1990. Spiders of China in color. Changsha, China: Hunan Science and Technology Press.
- Hu JL. 1984. The Chinese spiders collected from fields and forests. Tianjin, China: Tianjin Science and Technology Press. (in Chinese)
- Kayashima I. 1943. Spiders of Formosa. Tokyo, Japan: Touto Publishing Co., 70 pp. (in Japanese)
- Lee CL. 1964. Spiders of Formosa. Taichung, Taiwan: Privately published. (in Chinese)
- Lucas H. 1836. Observations sur les Araneae du genre *Hersilia* et description de deux especes nouvelles appartenant a ce genre. Mag. Zool. Guerin, **6**: 1-11.
- Nakajima T. 1929. On hersiliid spiders of S. China. Lansania **1**: 145. (in Japanese)
- Platnick NI. 1989. Advances in spider taxonomy 1981-1987. A supplement to Brignoli's A catalogue of the Araneae described between 1940 and 1981. Manchester, UK: Manchester Univ. Press.
- Platnick NI. 1997. Advances in spider taxonomy 1992-1995 with redescrptions 1940-1980. New York: The New York Entomological Society and The American Museum of Natural History.
- Platnick NI. 2005. The world spider catalog, version 5.5. American Museum of Natural History. Available online at <http://research.amnh.org/entomology/spiders/catalog/INTRO1.html>. Accessed 12 Aug. 2005.
- Saito S. 1941. Suborder Arachnomorphae. Tetrasticta. Trionycha I. Fauna Nipponica Vol. 9, Fas. II, No. II. Tokyo: Sanseido Publishing Co.
- Song DX. 1987. Spiders from agricultural regions of China (Arachnida: Araneae). Beijing: Agriculture Publishing House.
- Song DX, SX Zheng. 1982. A new species of the family Hersiliidae (Araneae) of China. Acta Zootaxon. Sin. **7**: 40-42.
- Song DX, MS Zhu, J Chen. 1999. The spiders of China. Shijiazhuang, China: Hebei Science and Technology Publishing House.
- Tanikawa A. 1999. Japanese spiders of the genus *Hersilia* (Araneae: Hersiliidae). Acta Arachnol. **48**: 131-137.
- Wang JF, CM Yin. 1985. Two new species of spiders of the genus *Hersilia* from China (Araneae: Hersiliidae). Acta Zootaxon. Sin. **10**: 45-49.
- Yaginuma T. 1970. The spider fauna of Japan (revised in 1970). Bull. Nat. Sci. Mus. Tokyo **13**: 639-701. (in Japanese)
- Yaginuma T. 1977. A list of Japanese spiders (revised in 1977). Acta Arachnol. **27**: 367-406.
- Zhu CD. 1983. A list of Chinese spiders (revised in 1983). J. Bethune Med. Univ. **9 (Supplement)**: 1-130.