肆、分類處理

本論文共報告袋蛛科蜘蛛 3 屬 29 種，馬蒂蛛屬 (genus Matidia) 為新紀錄屬；新紀錄種 6 種，包括紅螯蛛屬 2 種，袋蛛屬 4 種；新種則有紅螯蛛屬 5 種，袋蛛屬 3 種，馬蒂蛛屬 1 種，共計 9 種。檢討台灣產袋蛛科記錄，將台灣袋蛛、高山袋蛛及關山袋蛛處理為同種，其中台灣袋蛛為有效名，高山袋蛛 (Clubiona bonicula) 及關山袋蛛 (C. kuanshanensis) 為台灣袋蛛 (C. taiwanica) 的同物異名。萱嶋氏袋蛛 (C. kayashimai)、日本袋蛛 (C. japonica) 及活潑紅螯蛛 (Cheiracanthium lascivum) 三種並未採得標本，其中萱嶋氏袋蛛依其原始文獻 (Ono, 1994) 中所紀載之標本紀錄及形態描述，可確認其在台灣的分布，而八木沼氏 (Yaginuma, 1970) 雖記載日本袋蛛及活潑紅螯蛛分布於台灣，但文中並未提出相關標本採集紀錄，由於本科蜘蛛外形相似，極易誤認，故將此二種蜘蛛處理為疑問種。

Family Clubionidae Wagner, 1887 袋蛛科
Type genus: Clubiona Latreille, 1804

Diagnosis.
Family Clubionidae resembles Corinnidae, Liocranidae, Anyphaenidae and Gnaphosidae, and can be distinguished by following characteristics:
1. Clubionidae can be distinguished from Corinnidae and Liocranidae by the wide eye rows, lacking cuticle plate on epigastric area and lacking special cylindrical gland spigots on posterior spinnerets.
2. Clubionidae can be distinguished from Anyphaenidae by the small and posteriorly deposited tracheal spiracle.
3. Clubionidae can be distinguished from Gnaphosidae by the closely deposited anterior spinnerets and the wide eye rows (Deeleman-Reinhold, 2001).


Key to genera occurring in Taiwan.

1. a. Carapace with thoracic groove; PER usually wider than AER (Figure 10A). Male palpal cymbium never with retrolater spur (Figure 6A); spermathecae and bursae present (Figure 5D).-----------------------------2
   b. Thoracic groove lacking or indicated by dark pigment; PER not or barely wider

2
than AER (Figure 30A). Male palpal cymbium with retrobasal spur (Figure 25A); spermathecae in posterior position, bursa often reduced or obsolete (Figure 25D).

Genus Clubiona Latreille, 1804 袋蛛屬

*Clubiona* Latreille, 1804: 134.

Type species: *Clubiona pallidula* (Clerck, 1758)

Diagnosis.

*Clubiona* can be distinguished from *Cheiracanthium* by the forth pair legs longer than the first pair, the PER wider than AER and lacking retrolateral spur on male palpal cymbium. In addition, *Clubiona* can be distinguished from *Matidia* by the the forth pair legs longer than the first pair (Deeleman-Reinhold, 2001).


Key to species occurring in Taiwan.

1. a. Metatarsus I, II with 3 pairs of ventral spine. - *Clubiona taiwanica*
   b. Metatarsus I, II with 2 pairs of ventral spine. - *Cheiracanthium*
2. a. Chelicera and carapace with dark strip (Figure 9A). - *C. deletrix*
   b. Chelicera and carapace without dark strip. - *Matidia*
3. a. Body length smaller than 4mm. - *Clubiona expansa*
   b. Body length larger than 4mm. - *C. jucunda*
4. a. Chelicera armed with 3 retromarginal teeth. - *C. kurosawai*
   b. Chelicera armed with 4 retromarginal teeth or more. - *C. yangmingensis*
5. a. Male. - *Clubiona taiwanica*
   b. Female. - *C. deletrix*
6. a. Abdomen with dorsal scutum (Figure 10A). - *C. tanikawai*
   b. Abdomen without dorsal scutum. - *C. yangmingensis*
7. a. Chelicera armed with 3 retromarginal teeth. - *C. expansa*
   b. Chelicera armed with 2 retromarginal teeth. - *C. jucunda*
8. a. Chelicera armed with 3 promarginal teeth. - *C. kurosawai*
   b. Chelicera armed with 4 promarginal teeth or more. - *C. yangmingensis*
b. Palpal tegulum without strong apophysis.  

10. a. Palpal tibial apophysis much longer than palpal tibia (Figure 8B). - C. corrugata  
   b. Palpal tibial apophysis not longer than palpal tibia.  

11. a. Palpal tibial apophysis with lateral flange near base (Figure 13B). - C. japonicola  
   b. Palpal tibial apophysis without lateral flange near base.  

12. a. Retromargin of fang groove bears a cuticle plate (Figure 6E). - C. asrevida  
   b. Retromargin of fang groove without cuticle plate.  

13. a. Chelicera armed with 2 retromarginal teeth (Figure 11F). - C. yaginumai  
   b. Chelicera armed with 3 retromarginal teeth or more.  

14. a. Palpal femur with a distal spur (Figure 11H). - C. femorocalcarata  
   b. Palpal femur without distal spur.  

15. a. Palpal tibial apophysis with a distal spur (Figure 7A). - C. brevispina  
   b. Palpal tibial apophysis without distal spur. - C. moralis  

16. a. Chelicera armed with 4 retromarginal teeth; palpal tibial apophysis with lateral flange. - C. kurilensis  
   b. Chelicera armed with 3 retromarginal teeth; palpal tibial apophysis without lateral flange. - C. insulana  

17. a. Chelicera armed with 3 promarginal teeth. - C. insulana  
   b. Chelicera armed with 4 promarginal teeth or more.  

18. a. Epigynum with 2 genital openings (Figure 13C). - C. viridula  
   b. Epigynum with 1 genital opening (Figure 14C).  

19. a. Genital opening near epigastric furrow (Figure 20C). - C. expansa  
   b. Genital opening distant from epigastric furrow (Figure 16C). - C. kurosawai  

20. a. Genital opening near epigastric furrow. - C. expansa  
   b. Genital opening distant from epigastric furrow. - C. jucunda  

21. a. Chelicera armed with 3 retromarginal teeth or more. - C. kayashimai  
   b. Chelicera armed with 2 retromarginal teeth.  

22. a. Epigynum with one genital opening. - C. kayashimai  
   b. Epigynum with two genital openings.  

23. a. Chelicera, labium and maxilla much darker relate to carapace. - C. japonicola  
   b. Chelicera yellowish brown, not much darker relate to carapace. - C. asrvida  

24. a. Genital openings separated from each other (Figure 12C). - C. insulana  
   b. Genital openings close to each other or only one opening.  

25. a. Genital opening in anterior part of the epigynum. - C. moralis  
   b. Genital opening not in anterior part of the epigynum.  

26. a. Genital opening in the middle of the epigynum (Figure 11D). - C. femorocalcarata  
   b. Genital opening in posterior part of the epigynum. - C. brevispina
Clubiona asrevida Ono, 1992 雪山袋蛛
(Figure 6,32)

Clubiona asrevida Ono, 1992: 124, f. 5-7; Ono, 1994: 81, f. 19-22; Song, Zhu and Chen, 1999: 414, f. 247C-D.

Specimens examined.

NANTOU Co.: LENAI, Lushanwenchuan, alt. 1200m, 1 female (NTNUB-Ar 19797), 28-VIII-1996, Shyh-Hwang CHEN leg. KAOHSIUNG Co.: TAOYUAN, Tungchi, alt. 1600 m, 1 female (NTNUB-Ar 11831), 24-VII-2002, Chia-Lung HUANG leg. PINTUNG Co.: WUTAI, Chiaokuolatzu, alt. 1500m, 1 female (NTNUB-Ar 17726), 27-VI-2003, Ya-Hui CHEN leg. HUALIEN Co.: HSULIN, Panshih-shanchuang, alt. 1200m, 7 males (NTNUB-Ar 21939 - 21945), 28-II-2004, Wen-Juen HUANG leg. TAITUNG Co.: HAITUAN, 3Km SW Wulu, alt. 1800m, 1 male and 1 female (NTNUB-Ar 24063- 24064), 26-VI-2004, Shyh-Hwang CHEN leg.; PEINAN, 2Km SW Toushan, alt. 1620 m, 10 males and 6 females (NTNUB-Ar 22951 - 22966), 12-I-2004, Wen-Juen HUANG leg.

Diagnosis. Clubiona asrevida resembles C. diversa O. P.-Cambridge, 1862 widely distributed from Europe to East Asia, but can be distinguished from the latter by having a slender palpal retrolateral apophysis (Figure 6B) and a smaller bulb on the male palp, and having spermathecae separated in female epigynum (Figure 6C).

Description.

Measurements (in mm) for 4 males are followed by those of 4 females (in parentheses): Body length 4.53 –6.66 (6.19-6.66); carapace length 2.06-3.16 (2.44-3.16), width 1.50-2.19 (1.75-2.13), ratio of length/width 1.37-1.44 (1.28-1.49); abdomen length 2.47-3.50 (3.43-3.96), width 1.34-1.69 (1.94-2.50); hight of clypeus 0.04-0.06 (0.05-0.09); diameters of AME 0.11-0.15 (0.13-0.15), ALE 0.13-0.18 (0.13-0.15), PME 0.10-0.14 (0.10-0.13), PLE 0.10-0.14 (0.12-0.14); ratio of MOA-L/AW 1.07-1.15 (0.96-1.14), ratio of MOA-AW/PW 0.56-0.70 (0.59-0.70). Measurements of legs are given in table 1.

Male. Carapace yellowish, longer than wide. Thoracic groove longitudinal, cervical groove not apparent. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae reddish brown, with a lateral candyle at the base. Promargin of fang groove armed with 5 teeth, the second largest; retromargin of fang groove bears a cuticle plate
with 2-3 small teeth on it (Figure 6E). Labium reddish brown, longer than wide. Male palp reddish brown, embolus long threadlike, end on membraneous conductor (Figure 6A). Palpal tibial apophysis pyramid-shaped in lateral view (Figure 6B). Abdomen grayish yellow, longer than wide, cardiac pattern brown. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Carapace armed with 6 promarginal and 4 retromarginal teeth (Figure 6F). Epigynum with two genital openings that are closed to each other, and near the epigastric furrow (Figure 6C). Both spermatheca and bursa similar in size, and globular form (Figure 6D).

**Distribution.** Endemic to Taiwan.

**Remarks.**

Ono (1992) first described *Clubiona asrevida* from Taiwan with illustrations (♂). It can be found resting under stone or in leaf litter during the daytime in the mountain area of Taiwan between 1200 m and 2000 m above the sea level.

*Clubiona brevispina* sp. nov. 短棘袋蛛

(Figure 7, 32)

**Type series.** Holotype: male (NTNUB-Ar 21684), Kuantzeling, PAIHO, TAINAN Co. alt. 350m, 14-III-2004, Shyh-Hwang CHEN leg. Paratypes: 1 male (NTNUB-Ar 21685), 1 female (NTNUB-Ar 26144), data same as in holotype.; 1 female (NTNUB-Ar 26288), same locality as in holotype, 1-X-2003, Shyh-Hwang CHEN leg.

**Other specimens examined.**

TAIPEI Co.: PINGLIN, Pihuchiao, alt. 250m, 1 male (NTNUB-Ar 5998), 13-VIII-1996, Shyh-Hwang CHEN leg.; WULAI, Wulai, alt. 250m, 1 male (NTNUB-Ar 6914), 25-III-2000, Shyh-Hwang CHEN leg.

**Diagnosis.** *Clubiona brevispina* resembles *C. damirkovaci* Deeleman-Reinhold, 2001 occurring in SouthEast Asia, but can be distinguished from the latter by the wider tibial apophysis with a distal short spur on the tibial apophysis of male palp (Figure 7B), and the globular spermatheca in female epigynum (Figure 7C, D).

**Description.**

Measurements (in mm) based on the holotype (NTNUB-Ar 21684) and a paratype female (NTNUB-Ar 26144; in parentheses): Body length 5.13 (6.31); carapace length
2.25 (2.53), width 1.63 (1.97), ratio of length/width 1.38 (1.29); abdomen length 2.88 (3.78), width 1.41 (2.16); height of clypeus 0.05 (0.05); diameters of AME 0.13 (0.15), ALE 0.15 (0.17), PME 0.12 (0.14), PLE 0.12 (0.14); ratio of MOA-L/AW 0.92 (0.90), ratio of MOA-AW/PW 0.72 (0.69); length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 4.53 = 1.22 + 1.91 + 0.88 + 0.53 (4.48 = 1.31 + 1.81 + 0.83 + 0.53), II 5.00 = 1.41 + 2.03 + 1.00 + 0.56 (4.91 = 1.44 + 2.00 + 0.94 + 0.53), III 4.34 = 1.16 + 1.56 + 1.09 + 0.53 (4.48 = 1.25 + 1.56 + 1.11 + 0.56), IV 6.25 = 1.69 + 2.16 + 1.75 + 0.66 (6.41 = 1.66 + 2.25 + 1.88 + 0.63).

Male (holotype). Carapace yellowish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Anterior width of MOA slightly longer than length, posterior width longer than anterior width. Chelicerae yellowish brown, armed with 4 promarginal and 2 retromarginal teeth (Figure 7E). Labium yellowish brown, longer than wide. Male palp yellowish brown, embolus short and curved (Figure 7A). Palpal tibial apophysis blunt with a distal spur (Figure 7B). Abdomen grayish yellow, longer than wide. Leg formula 4-2-1-3.

Female (NTNUB-Ar 26144). Similar to males in general aspects and color pattern. Carapace armed with 5 promarginal and 2 retromarginal teeth (Figure 7F). Both spermatheca and bursa globular form, bursa larger than spermatheca (Figure 7B), spermatheca seen through tegument (Figure 7A).

**Variations.** Measurements (in mm) including types given for 4 males are followed by those of 2 females (in parentheses). Body length 4.22-5.75 (5.84-6.31); carapace length 2.13-2.72 (2.53-2.56), width 1.53-2.03 (1.97-1.98), ratio of length/width 1.34-1.40 (1.29); abdomen length 2.09-3.03 (3.28-3.78), width 1.16-1.88 (1.97-2.16); height of clypeus 0.04-0.06 (0.05); diameters of AME 0.13-0.15 (0.15), ALE 0.14-0.17 (0.13-0.17), PME 0.11-0.13 (0.14), PLE 0.12-0.14 (0.13-0.14); ratio of MOA-L/AW 0.86-0.92 (0.90-0.91), ratio of MOA-AW/PW 0.69-0.75 (0.68-0.69). Measurements of leg segments are shown as table 2.

**Distribution.** Endemic to Taiwan.

**Etymology.** The specific name is derived from the distal short spur on the tibial apophysis of male palp. The word “brevispina” means “short spine”.

**Remarks.** Individuals of *Clubiona brevispina* have been collected at elevations between 200 m and 400 m.
**Clubiona corrugata** Bösenberg et Strand, 1906 褶袋蛛
(Figure 8, 32)


Specimens examined.

TAIPEI Co.: SHENKENG, Shenkeng, alt. 100m, 1 male (NTN Ub-Ar 17893), 18-IV-1982, Shyh-Hwang CHEN leg.

**Diagnosis.** *Clubiona corrugata* can be distinguished from other congeners by the stout, elongated tibial apophysis in males (Figure 8B).

**Description.**

Measurements (in mm) for 1 male: Body length 4.78; carapace length 2.25, width 1.53, ratio of length/width 1.47; abdomen length 2.53, width 1.25; height of clypeus 0.06; diameters of AME 0.12, ALE 0.14, PME 0.12, PLE 0.12; ratio of MOA-L/AW 1.11, ratio of MOA-AW/PW 0.63. Measurements of legs are given in table 3.

Male. Carapace reddish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size but ALEs slightly larger than other eyes. Posterior eye row wider than anterior one, PER straight, AER slightly recurved. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae reddish brown, armed with 3 promarginal and 2 small retromarginal teeth (Figure 8C). Labium reddish brown, longer than wide. Male palp reddish brown: embolus curved, end on membraneous conductor (Figure 8A). Palpal tibial apophysis elongated (Figure 8B). Abdomen grayish brown, longer than wide. Leg formula 4-2-1-3.

Female. Not examined.
**Distribution.** Taiwan (new record), China and Japan.

**Remarks.**

*Clubiona corrugata* was recorded from Taiwan for the first time. Only one specimen (♂) was collected and illustrated.

*Clubiona deletrix* O. P. - Cambridge, 1885 斑袋蛛

(Figure 9, 33)


**Specimens examined.**

**TAIPEI CITY:** WENSAN, Chihnankung, alt.250m, 1 female (NTNUB-Ar 13700), 31-V-2000, and 1 female (NTNUB-Ar 21864), 31-XII-2003, Shyh-Hwang CHEN leg.

**Diagnosis.** *Clubiona deletrix* can be distinguished from other congeners of Taiwan by the dark markings on carapace and abdomen, and resembles *C. picturata* Deeleman-Reinhold, 2001 occurring in South-East Asia, but can be distinguished from the latter by the large bulb, the short embolus on male palp and having larger bursa in female epigynum (Figure 9C).

**Description.**

Measurements (in mm) for 3 males are followed by those of 5 females (in parentheses): Body length 4.47-5.83 (5.43-6.94); carapace length 1.88-2.66 (2.41-3.03), width 1.34-1.88 (1.69-2.00), ratio of length/width 1.40-1.42 (1.34-1.52); abdomen length 2.59-3.17 (2.97-4.34), width 1.22-1.41 (1.69-2.50); height of clypeus 0.05-0.08 (0.05-0.08); diameters of AME 0.12-0.14 (0.13-0.17), ALE 0.13-0.14 (0.13-0.15), PME 0.11-0.13 (0.12-0.13), PLE 0.11-0.13 (0.12-0.15); ratio of MOA-L/AW 1.09-1.00 (0.90-1.04), ratio of MOA-AW/PW 0.69-0.75 (0.67-0.77). Measurements of legs are given in table 4.

Male. Carapace reddish brown, longer than wide, dark marking on cephalic region (Figure 9A). Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA almost as long as anterior width, posterior width longer than anterior width. Chelicerae dark reddish brown, dark markings anterior view. Pormargin of fang groove with 4 teeth, the second largest; retromargin of fang groove with 2 teeth (Figure 9F). Labium reddish brown, longer than wide. Male palp yellowish brown, embolus short (Figure 9B). Palpal tibial apophysis small and short (Figure 9C). Abdomen yellowish brown, longer than wide, with a brown cardiac pattern on dorsum and transverse dark markings posteriorly (Figure 9A). Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Epigynum with a central depression and two genital openings on posterior part of depression (Figure 9D). Spermatheca irregular, bursa globular form (Figure 9E).

**Distribution.** Taiwan, China and Japan.

**Remarks.**

*Clubiona deletrix* was widespreaded in mainland China, and was recorded from Taiwan by Ono (1994) for the first time.
**Clubiona expansa sp. nov.** 扇棘袋蛛
(Figure 10, 33)

**Type series.** Holotype: male (NTNUB-Ar 7244), Pihuchiao, PINGLIN, TAIPEI Co. alt. 350m, 13-VIII-1996, Shyh-Hwang CHEN leg. Paratypes: 1 female (NTNUB-Ar 7245), data same as in holotype; 1 male (NTNUB-Ar 16862), Chingshanchiao, PINGLIN, TAIPEI Co. alt. 300m, 14-VII-2003, Shyh-Hwang CHEN leg.

**Other specimens examined.**
TAIPEI CITY: WENSHAN, Mucha, Maokong, alt. 200m, 1 male and 1 female (NTNUB-Ar 14051 and NTNUB-Ar 14056), 1-VIII-2002, Shyh-Hwang CHEN leg. TAIPEI Co.: PINGHSI, Pinghsi, alt. 250m, 1 female (NTNUB-Ar 19104), 17-IX-2003, Shyh-Hwang CHEN leg.; SHIHTING, Shihting, alt. 250m, 1 female (NTNUB-Ar 6311), 4-VIII-1994, Wen-Jean HUANG leg.; SHIHTING, Nanku, alt. 250m, 1 male (NTNUB-Ar 10811), 20-V-2002, Shyh-Hwang CHEN leg.; SHIHTING, Feitsui Reservoir, alt. 170m, 1 female (NTNUB-Ar 6991), 8-IV-2000, Shyh-Hwang CHEN leg.; HSINTIEN, Yinghotung, alt. 350m, 1 female (NTNUB-Ar 1864), 28-III-1996, Shyh-Hwang CHEN leg. NANTOU Co.: LENAI, Kuantaochi, alt. 750m, 1 female (NTNUB-Ar 13405), 29-VIII-1996, Shyh-Hwang CHEN leg. KAOHSIUNG Co.: MAOLIN, Shanping, alt. 700m, 1 male (NTNUB-Ar 13361), 6-V-1995, Shyh-Hwang CHEN leg. ILAN Co.: CHIAOCHI, Chiaochi, alt. 300m, 1 female (NTNUB-Ar 522), 14-IV-2000, Wen-Jean HUANG leg.; same locality, 1 male (NTNUB-Ar 630), 13-V-2000, Shyh-Hwang CHEN leg.; TATUNG, Chilan, alt. 500m, 1 male (NTNUB-Ar 6677), 24-VIII-1993, Shyh-Hwang CHEN leg. TAITUNG Co.: TUNGHU, Tungho Farm, alt. 400m, 1 male and 1 female (NTNUB-Ar 18418, 18462), 29-VI-2003, and 1 female (NTNUB-Ar 22417), 24-IV-2004, Shyh-Hwang CHEN leg.

**Diagnosis.** Clubiona expansa can be distinguished from other congeners by the blunt and elongated tibial apophysis on male palp (Figure 10C) and having a pair of dark tubular markings seen through tegument in female epigynum (Figure 10D).

**Description.**
Measurements (in mm) based on the holotype (NTNUB-Ar 7244) and a paratype female (NTNUB-Ar 7245; in parentheses): Body length 5.53 (5.53); carapace length 2.25 (2.25), width 1.50 (1.63), ratio of length/width 1.50 (1.382); abdomen length 3.28 (3.28), width 1.22 (1.38); height of clypeus 0.05 (0.05); diameters of AME 0.10 (0.10), ALE 0.14 (0.14), PME 0.13 (0.13), PLE 0.13 (0.13); ratio of MOA-L/AW 1.15 (1.14), ratio of MOA-AW/PW 0.60 (0.60); length of legs (total length = femur + (patella + tibia)
(metatarsus + tarsus): I 7.78 = 2.09 + 3.25 + 1.66 + 0.78 (7.06 = 1.97 + 2.91 + 1.44 + 0.75), II 7.72 = 2.09 + 3.13 + 1.69 + 0.81 (7.03 = 2.03 + 2.78 + 1.44 + 0.78), III 6.06 = 1.72 + 2.03 + 1.63 + 0.69 (5.72 = 1.69 + 1.84 + 1.53 + 0.66), IV 8.66 = 2.31 + 3.00 + 2.50 + 0.84 (8.50 = 2.25 + 2.94 + 2.50 + 0.81).

Male (holotype). Carapace reddish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae reddish brown, armed with 3 teeth on each promarginal and retromargin of fang groove (Figure 10F). Labium reddish brown, longer than wide. Male palp reddish brown, embolus coiled upward (Figure 10B). Palpal tibial apophysis blunt and elongated (Figure 10C). Abdomen grayish yellow, with a large dorsal scutum (Figure 16A). Leg formula 4-1-2-3.

Female (NTNUB-Ar 7245). Similar to males in general aspects and color pattern, but without dorsal scutum. Genital opening situated near epigastric furrow (Figure 10D). Spermatheca globular form, smaller than bursa (Figure 10E). Tubular copulatory ducts seen through tegument.

Variations. Measurements (in mm) including types given for 6 males are followed by those of 6 females (in parentheses). Body length 5.53-6.28 (5.53-7.16); carapace length 2.22-2.59 (2.44-2.72), width 1.50-1.78 (1.63-2.00), ratio of length/width 1.38-1.50 (1.36-1.51); abdomen length 3.16-3.69 (3.00-4.55), width 1.09-1.41 (1.28-2.47); height of clypeus 0.05-0.06 (0.05-0.08); diameters of AME 0.10-0.12 (0.10-0.12), ALE 0.14-0.17 (0.13-0.16), PME 0.13-0.14 (0.10-0.14), PLE 0.13-0.14 (0.12-0.14); ratio of MOA-L/AW 1.14-1.27 (1.14-1.24), ratio of MOA-AW/PW 0.56-0.63 (0.58-0.64).

Measurements of leg segments are shown as table 5.

Distribution. Endemic to Taiwan.

Etymology. The specific name is derived from the distally expanded tibial apophysis of male palp. The word “expansa” means “expanded”.

Remarks.

Clubiona expansa can be distinguished from other clubionids from Taiwan by the distally expanded tibial apophysis on male palp. It is widespread in the mountain areas of Taiwan at lower elevations between 100 m and 800 m.
Clubiona femorocalcarata sp. nov. 腿距袋蛛
(Figure 11, 33)

**Type series.** Holotype: male (NTNUB-Ar 22786), Yuanwangkeng, KUNGLIAO, TAIPEI Co. alt. 300m, 30-V-2004, Wen-Juen HUANG leg. Paratype: 1 female (NTNUB-Ar 24162), same locality as in holotype, 14-VII-2004, Wen-Juen HUANG leg.

**Other specimens examined.**


**HSINCHU Co.:** PEIPU, Wutzushan, alt. 850m, 1 male (NTNUB-Ar 7716), 3-IV-1997, Shyh-Hwang CHEN leg.

**NANTOU Co.:** LENAI, Kuantaochi, alt. 600m, 1 male (NTNUB-Ar 13875), 5-IV-1988, Shyh-Hwang CHEN leg. 

**KAOHSIUNG Co.:** MAOLIN, Shanping, alt. 700m, 1 male (NTNUB-Ar 13352), 6-V-1995, Shyh-Hwang CHEN leg.; same locality, 1 male (NTNUB-Ar 14669), 28-VI-1995, Shyh-Hwang CHEN leg.

**Diagnosis.** Clubiona femorocalcarata resembles C. yaginumai Hayashi, 1989 and can be distinguished from the latter by having a distal spur on femur of male palp (Figure 11H), the ventral dark markings on male abdomen (Figure 11A) and the central genital opening in female epigynum (Figure 11D).

**Description.**

Measurements (in mm) based on the holotype (NTNUB-Ar 22786) and paratype female (NTNUB-Ar 24162; in parentheses): Body length 4.91 (4.09); carapace length 2.16 (1.81), width 1.66 (1.38), ratio of length/width1.30 (1.32); abdomen length 2.75 (2.28), width 1.34 (1.31); height of clypeus 0.06 (0.05); diameters of AME 0.09 (0.08), ALE 0.13 (0.12), PME 0.12 (0.10), PLE 0.12 (0.10); ratio of MOA-L/AW 1.21 (1.12),
ratio of MOA-AW/PW 0.56 (0.57); length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 5.81 = 1.66 + 2.44 + 1.13 + 0.59 (3.56 = 1.09 + 1.28 + 0.72 + 0.47), II 6.91 = 1.88 + 2.94 + 1.44 + 0.66 (4.38 = 1.28 + 1.78 + 0.81 + 0.50), III 5.16 = 1.44 + 1.72 + 1.44 + 0.56 (3.69 = 1.09 + 1.25 + 0.91 + 0.44), IV 6.94 = 1.88 + 2.38 + 1.97 + 0.72 (5.22 = 1.47 + 1.78 + 1.38 + 0.59).

Male (holotype). Carapace yellowish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, AER straight, PER slightly procurved. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae reddish brown, armed with 5 teeth on each promarginal and retromargin of fang groove (Figure 11F), the first four retromarginal teeth close together. Labium reddish brown, longer than wide. Male palp yellow, with a distal spur on femur (Figure 11G), embolus short (Figure 11B), tibial apophysis indistinct (Figure 11C). Abdomen pale yellow, longer than wide, with dark markings ventrally (Figure 11A). Leg formula 4-2-1-3.

Female (NTNUB-Ar 24162). Similar to males in general aspects and color pattern but abdomen without dark markings on venter. Epigynum with one genital opening in the middle (Figure 11D).

**Variations.** Measurements (in mm) including types given for 5 males are followed by those of 5 females (in parentheses). Body length 4.06-4.91 (3.88-4.25); carapace length 1.72-2.16 (1.41-1.81), width 1.25-1.66 (1.00-1.28), length/width 1.30-1.38 (1.31-1.41); abdomen length 2.34-2.78 (2.28-2.66), width 0.95-1.34 (1.21-1.53); height of clypeus 0.03-0.06 (0.03-0.05); diameters of AME 0.08-0.09 (0.06-0.08), ALE 0.12-0.14 (0.10-0.12), PME 0.10-0.12 (0.09-0.10), PLE 0.10-0.12 (0.09-0.10); MOA-L/AW 1.11-1.31 (1.12-1.43), MOA-AW/PW 0.56-0.60 (0.54-0.57). Measurements of leg segments are shown as table 6.

**Distribution.** Endemic to Taiwan.

**Etymology.** The specific name is derived from the distal spur on femur of male palp. The word “*femorocalcarata*” means “femur spur”.

**Remarks.** Individuals of *Clubiona femorocalcarata* have been collected at elevations between 200 m and 800 m.
Clubiona insulana Ono, 1989 島嶼袋蛛

(Figure 12, 34)

*C. insulana* Ono, 1989: 162, f. 21-22; Song, Zhu and Chen, 1999: 416, f. 249C-D.

**Specimens examined.**


**Diagnosis.** *Clubiona insulana* most resembles *C. asrevida* Ono, 1992 but can be distinguished from the latter by the blunt tibial apophysis on the male palp (Figure 12B) and having two widely separated genital openings and a pair of dark rod-like markings seen through the tegument in the female epigynum (Figure 12C).

**Description.**

Measurements (in mm) for 2 males are followed by those of 5 females (in parentheses): Body length 5.41-5.47 (5.84-7.74); carapace length 2.38-2.47 (2.72-3.09), width 1.75-1.78 (1.94-2.13), ratio of length/width 1.33-1.41 (1.35-1.52); abdomen length 2.94-3.09 (3.13-4.65), width 1.53-1.56 (1.81-2.44); height of clypeus 0.03 (0.04-0.08); diameters of AME 0.13-0.14 (0.13-0.19), ALE 0.14-0.15 (0.14-0.175), PME 0.13 (0.13-0.15), PLE 0.13-0.14 (0.13-0.17); ratio of MOA/L/AW 1.00 (0.97-1.07), ratio of MOA/AW/PW 0.65-0.67 (0.59-0.65). Measurements of legs are given in table 7.

Male. Carapace pale yellow, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae reddish brown. Promargin of fang groove armed with 4 teeth, the second largest; retromargin of fang groove armed with 3 small teeth, distal tooth dispart from the first and second teeth. Labium reddish brown, longer than wide. Male palp reddish brown, embolus curved, ends on membranous conductor (Figure 12A). Palpal tibial apophysis blunt (Figure 12C). Abdomen grayish yellow, longer than wide, without any marking. Leg formula 4-2-1-3.
Female. Similar to males in general aspects and color pattern, larger than males. Epigynum with two genital openings, separated from each other, a pair of dark rod-like markings seen through tegument (Figure 12C).

**Distribution.** Taiwan and Japan (Ryukyu Island).

**Remarks.**

Ono (1989) first described *Clubiona insulana* from Ryukyu based on the male holotype, Japan, and, who also recorded the occurrence of the species from Taiwan in 1994. The female of *C. insulana* was described for the first time in the present paper.

*Clubiona japonicola* Bösenberg et Strand, 1906 捲葉袋蛛

*(Figure 13, 34)*


*C. parajaponicola* Schenkel, 1963: 251, f. 141.

**Specimens examined.**

**TAOYUAN Co.:** YANGMEI, Kaojung, alt. 50 m, 2 male and 1 female (NTNUB-Ar 26138 - 26140), 10-IV-2004, and 3 females (NTNUB-Ar 26141 - 26143), 11-VI-2004, Ya-Hui CHEN leg. **ILAN Co.:** DONGSHAN, Kuanghsing, alt. 20m, 2 males and 8 females (NTNUB-Ar 27109 - 27118), 10-VII-2004, Wen-Juen HUANG leg. **HUALIEN Co.:** YULI, Kocheng, alt. 100m, 1 female (NTNUB-Ar 9310), 13-XI-1999, Shyh-Hwang CHEN leg. **TAITUNG Co.:** CHIHSIANG, Tapochih, alt.
Diagnosis. *Clubiona japonicola* can be distinguished from other congeners by having a lateral flange on the tibial apophysis of male palpal (Figure 13B), and having two genital openings and the globular spermatheca in female epigynum (Figure 13C).

Description.

Measurements (in mm) for 3 males are followed by those of 4 females (in parentheses): Body length 5.50-6.28 (4.50-6.13); carapace length 2.38-2.68 (2.13-2.84), width 1.69-1.88 (1.53-1.88), ratio of length/width 1.33-1.48 (1.31-1.52); abdomen length 3.00-3.59 (2.38-3.59), width 1.50-1.84 (1.38-2.00); height of clypeus 0.04-0.05 (0.03-0.04); diameters of AME 0.15-0.18 (0.14-0.17), ALE 0.14-0.16 (0.12-0.15), PME 0.12-0.15 (0.12-0.15), PLE 0.13-0.15 (0.12-0.15); ratio of MOA-L/AW 0.87-0.97 (0.86-0.96), ratio of MOA-AW/PW 0.70-0.76 (0.63-0.69). Measurements of legs are given in table 8.

Male. Carapace pale yellow, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size but AME slightly larger than others. Posterior eye row wider than anterior one, both rows straight. The anterior width of MOA slightly longer than length, posterior width longer than anterior width. Chelicerae dark brown, armed with 3 promarginal and 2 retromarginal teeth. Labium reddish brown, longer than wide (Figure 13E). Male palp yellowish brown, with a coiled embolus (Figure 13A), tibial apophysis with a lateral flange near base (Figure 13B). Abdomen grayish yellow, longer than wide, without any marking on it. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Carapace armed with 6 promarginal and 4 retromarginal teeth (Figure 13F). Epigynum with two genital openings, globular spermatheca seen through tegument (Figure 13C).

Distribution. Taiwan, China and Japan.

Remarks.

*Clubiona japonicola* had been recorded from Taiwan since 1921 (Nakajima, 1921). They can be found in paddy areas near water at low elevations between 30 m and 300 m.
Clubiona jucunda (Karsch, 1879)羽斑袋蛛
(Figure 14, 34)

Liocranum jucundum Karsch, 1879: 92.


*Clubiona mantis* Bösenberg and Strand, 1906: 286, pl. 16, f. 492; Saito, 1934b: 288, pl. 14, f. 45; Saito, 1959: 143, text-f. 4.3, f. 191a-d.

*Clubiona sakatensis* Saito, 1939: 31, f. 4.2, pl. 1, f. 10.

Specimens examined.


**TAIPEI Co.:** KUNGGLIAO, Yuanwangkeng, alt. 300m, 1 male and 1 female (NTNUB-Ar 24092 - 24093), 14-VII-2004, Wen-Juen HUANG leg.; SHIHTING, Mt. Pichiashan, alt. 500m, 1 male (NTNUB-Ar 22042), 2-II-2004, Shyh-Hwang CHEN leg.

**TAICHUNG Co.:** HOPIANG, Kukan, alt. 700m, 1 male (NTNUB-Ar 21932), 27-I-2004, Wen-Juen HUANG leg. **NANTOU Co.:** LENAI, Huisuilinchang, alt. 700m, 1 male (NTNUB-Ar 22042), 2-II-2004, Wen-Juen HUANG leg.; 1 male (NTNUB-Ar 4766), TSAOTUN, Kanshi, alt. 300m, 3-V-2004, Shyh-Hwang CHEN leg.

**KAOHSIUNG Co.:** TAOYUAN, Tungchi, alt. 1600m, 1 female (NTNUB-Ar 11830), 24-VII-2002, Chia-Lung HUANG leg. **PINTUNG Co.:** CHUNJENG, Old Chichia, alt. 570m, 1 male (NTNUB-Ar 21588), 9-X-1993, Shyh-Hwang CHEN leg.; LAIYI, Mt. Laishe, alt. 1730m, 1 female (NTNUB-Ar 15466), 10-I-2003, Her-Ming CHANG leg.
ILAN Co.: TOUCHEN, Dali, alt. 100m, 1 female (NTNUB-Ar 21715), 12-VIII-1996, Wen-Juen HUANG leg.; TOUCHEN, Chiukushan, alt. 400m, 1 female (NTNUB-Ar 27097), 20-III-2005, Shyh-Hwang CHEN leg.; DONGSHAN, Tahjinn, alt. 200m, 1 male (NTNUB-Ar 6729), 10-II-2000, Shyh-Hwang CHEN leg.

HUALIEN Co.: YULI, Antung, alt. 150m, 1 male (NTNUB-Ar 11729), 22-VI-2002, Shyh-Hwang CHEN leg.

TAITUNG Co.: 1 female (NTNUB-Ar 18416), TUNGHO, Tungho Farm, alt. 400m, 29-VI-2003, Shyh-Hwang CHEN leg.; same locality, 1 male (NTNUB-Ar 21893), 5-XII-2003, Wen-Juen HUANG leg.

Diagnosis. The genital organs of *Clubiona jucunda* resembles that of *C. deletrix* O. P.-Cambridge, 1885 in Taiwan but can be distinguished from the latter by lacking dark markings on carapace and abdomen, the triangular tibial apophysis on male palp (Figure 14B) and the cordate depression in female epigynum (Figure 14C).

Description. Measurements (in mm) for 5 males are followed by those of 5 females (in parentheses): Body length 5.78-6.75 (5.59-7.06); carapace length 2.59-3.03 (2.56-2.95), width 1.93-2.28 (1.84-2.13), ratio of length/width 1.32-1.39 (1.32-1.46); abdomen length 3.19-3.75 (2.88-4.30), width 1.63-2.03 (1.81-2.53); height of clypeus 0.05-0.08 (0.05-0.06); diameters of AME 0.13-0.15 (0.12-0.17), ALE 0.14-0.18 (0.14-0.17), PME 0.13-0.15 (0.12-0.14), PLE 0.14-0.18 (0.13-0.14); ratio of MOA-L/AW 1.00-1.11 (0.97-1.00), ratio of MOA-AW/PW 0.56-0.66 (0.62-0.68). Measurements of legs are given in table 9.

Male. Carapace reddish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, AER straight, PER slightly recurved. Length of MOA as long as anterior width, posterior width longer than anterior width. Chelicerae reddish brown, armed with 2 promarginal and 2 retromarginal teeth (Figure 14E). Labium reddish brown, longer than wide. Male palp reddish brown, tibial apophysis triangular, widened at base (Figure 14B). Abdomen grayish yellow with a dorsal scutum. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern but abdomen without dorsal scutum. Chelicerae armed with 3 promarginal and 2 retromarginal teeth (Figure 14F). Epigynum with a cordate depression (Figure 14C). Spermatheca globular form (Figure 14D).

Distribution. Taiwan, China and Japan.
Remarks.

Lee (1964) first recorded Clubiona jucunda from Taiwan. The dorsal markings on the abdomen of specimens form Taiwan was not as obvious as those from Japan.

*Clubiona kayashimai* Ono, 1994 萩嶋氏袋蛛

*C. kayashimai* Ono, 1994: 73, f. 3-5; Song, Zhu and Chen, 1999: 425, f. 246Q-R.

**Specimens examined.** Not examined.

**Diagnosis.** *Clubiona kayashimai* can be distinguished from other congeners by having central genital opening in female epigynum and the irregular spermatheca.

**Distribution.** Endemic to Taiwan.

Remarks.

Although we didn’t collect any specimen of *Cluboiona kayashima*, the occurrence of the species is undoubted according to the illustrations of specimen (♀) from Taiwan in 1994 (Ono, 1994).

*Clubiona kurilensis* Bösenberg et Strand, 1906 千島袋蛛

(Figure 15, 35)

Specimens examined.

**HUALIEN Co.:** YULI, Antung, alt. 150m, 1 male (NTNUB-Ar 14097), 14-VIII-2002, Shyh-Hwang CHEN leg.

**Diagnosis.** *Clubiona kurilensis* can be distinguished from other congeners by having a large lateral flange on the tibial apophysis on the male palp (Figure 15B).

**Description.**

Measurements (in mm) for male: Body length 4.66; carapace length 2.28, width 1.78, ratio of length/width 1.28; abdomen length 2.38, width 1.22; height of clypeus 0.04; diameters of AME 0.14, ALE 0.14, PME 0.14, PLE 0.13; ratio of MOA-L/AW 1.00, ratio of MOA-AW/PW 0.68. Measurements of legs are given in table 10.

Male. Carapace pale yellow, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA as long as anterior width, posterior width longer than anterior width. Chelicerae reddish brown, armed with 5 pro- and 3 retromarginal teeth (Figure 15C). Labium reddish brown, longer than wide. Male palp reddish brown, embolus long threadlike, ends on membraneous conductor (Figure 15A). Palpal tibial apophysis large, with a lateral flange (Figure 15B). Abdomen grayish yellow, longer than wide, without any marking. Leg formula 4-2-1-3.

Female. Not examined.

**Distribution.** Taiwan (new record), China and Japan.

**Remarks.**

*Clubiona kurilensis* was recorded from Taiwan for the first time. Only one male was collected and illustrated.
Clubiona kurosawai Ono, 1986 黒澤氏袋蛛
(Figure 16, 35)


Specimens examined

TAIPEI Co.: PINGLIN, Yingtzuling, alt. 600m, 2 females (NTNUB-Ar 27093 - 27094), 15-I-2005, Wen-Juen HUANG leg. TAOYUAN Co.: FUHSING, Paling, alt. 1500m, 2 females (NTNUB-Ar 9528 - 9529), 23-IV-1994, Shyh-Hwang CHEN leg. TAICHUNG Co.: TUNGSHIH, Anmashan. alt t. 2660m, 3 females (NTNUB-Ar 22698 - 22700), 5-IV-2004, Chia-Fan LIN leg.; HOPING, Ssuyuanakou, alt. 1900m, 2 females (NTNUB-Ar 12714 and NTNUB-Ar 12715), 1-IV-2000, Wen-Juen HUANG leg. NANTOU Co.: LENAI, Wushe, alt. 1000m, 1 female (NTNUB-Ar 21936), 27-XII-2003, Ya-Hui CHEN leg.; LUKU, Chitou, alt. 1050m, 1 female (NTNUB-Ar 1004), 18-II-1994, Shyh-Hwang CHEN leg.; same locality, 3 males (NTNUB-Ar 21721 - 21723), 1-II-2004, Wen-Juen HUANG leg.; LUKU, Sunlinchi, alt. 1650m, 1 female (NTNUB-Ar 1783), 11-II-1997, Shyh-Hwang CHEN leg.; HSINYI, Shihshan, alt. 2500m, 2 females (NTNUB-Ar 19332 - 19333), 21-XI-2003, and 1 female (NTNUB-Ar 19351), 22-XI-2003, Wen-Juen HUANG leg.; HSINYI, Tzuchung, alt. 2500m, 1 male and 2 females (NTNUB-Ar 19352 - 19354), 21-XI-2003, Wen-Juen HUANG leg. ILAN Co.: NANDAI, Tsuifenghu, alt. 1800m, 1 female (NTNUB-Ar 24197), 8-VII-2004, Yu-Ting LIN leg. TAITUNG Co.: HAITUAN, 3 Km SW Wulu, alt. 1800m, 1 female (NTNUB-Ar 24062), 26-VI-2004, Shyh-Hwang CHEN leg.; PEINAN, 2Km SW Toushan, alt. 1620m, 1 female (NTNUB-Ar 22934), 12-I-2004, Wen-Juen HUANG leg.

Diagnosis. Clubiona kurosawai can be distinguished from other congeners by the tegular apophysis on male palpal bulb (Figure 16A), the anteriorly situated genital openings and a pair of tubular copulatory ducts in female epigynum (Figure 13C). This species resembles C. wolongensis Zhu et An, 1999 occurring in mainland China, but differs from the latter by the slender palpal tibia (Figure 16A, B) and the bladder form bursa (Figure 16D).

Description.

Measurements (in mm) for 4 males are followed by those of 6 females (in parentheses): Body length 5.53-6.31 (6.59-8.09); carapace length 2.44-2.81 (2.72-3.31), width 1.72-2.03 (1.86-2.44), ratio of length/width 1.34-1.49 (1.33-1.46); abdomen length 2.91-3.50 (3.88-4.94), width 1.56-1.75 (2.31-3.16); hight of clypeus 0.06
(0.06-0.09); diameters of AME 0.12-0.14 (0.14-0.17), ALE 0.14-0.15 (0.14-0.18), PME 0.13-0.15 (0.14-0.17), PLE 0.13-0.15 (0.15-0.17); ratio of MOA-L/AW 1.08-1.56 (1.00-1.19), ratio of MOA-AW/PW 0.68-0.71 (0.63-0.77). Measurements of legs are given in table 11.

Male. Carapace reddish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae reddish brown, with a lateral candyle at the base. Promargin of fang groove armed with 3 teeth, the second largest; retromargin of fang groove armed with 2 teeth (Figure 16E). Labium reddish brown, longer than wide. Male palp reddish brown, palpal embolus long threadlike, tegulum apophysis developed (Figure 16A). Abdomen grayish brown, longer than wide with a grayish cardiac pattern. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Epigynum with two genital openings anteriorly, a pair of tubular copulatory seen through tegument (Figure 16C).

**Distribution.** Taiwan and Japan.

**Remarks.**

*Clubiona kurosawai* was recorded from Taiwan in 1994 (Ono, 1994), and can be found under stones at the moderate and high mountain areas in Taiwan.

*Clubiona moralis* Song et Zhu, 1991 齒袋蛛

(Figure 17, 35)

*C. moralis* Song and Zhu, in Song et al., 1991: 70, f. 5A-D; Song and Li, 1997: 429, f. 24A-D; Song, Zhu and Chen, 1999: 426, f. 250M-N, 252Q-R.

**Specimens examined.**

**KEELUNG CITY:** Nuannuan, Hsishih Dam, alt. 100m, 1 female (NTNUB-Ar 14654), 11-VII-1995, Shyh-Hwang CHEN leg. **TAIPEI Co.:** PINGLIN, Szutumiaopu, alt. 500m, 1 male (NTNUB-Ar 24765), 3-VIII-2004, Wen-Juen HUANG leg.; same locality, 2 females (NTNUB-Ar 27098 - 27099), 19-III-2005, Shyh-Hwang CHEN leg.

**MIAOLI Co.:** NANCHUANG, Hsiangtienhu, alt. 750m, 1 male (NTNUB-Ar 8286), 12-XII-1998, Shyh-Hwang CHEN leg. **CHIA YI Co.:** TAPU, 2.5K SE Tamaopu, alt. 450m, 1 male (NTNUB-Ar 16444), 3-IV-2003, Shyh-Hwang CHEN leg.
KAOHSIUNG Co.: TAOYUAN, Tungchi, alt. 1600m, 1 female (NTNUB-Ar 11858), 24-VII-2002, Chia-Lung HUANG leg. PINTUNG Co.: WUTAI, Chiaokuolatzu, alt. 1500m, 1 female (NTNUB-Ar 17677), 27-VI-2003, Ya-Hui CHEN leg. TAITUNG Co.: TUNGHGO, Taiyuan, alt. 100m, 1 female (NTNUB-Ar 24215), 12-VII-2004, Wen-Juen HUANG leg.

Diagnosis. *Clubiona moralis* resembles *C. yaginumai* Hayashi, 1989 but can be distinguished from the latter by having dark streak on the tegulum of the bulb, the short tibia of male palp (Figure 17A, B) and the oval bursa in female epigynum (Figure 17C, D).

Description.

Measurements (in mm) for 3 males are followed by those of 3 females (in parentheses): Body length 4.22-4.32 (4.30-5.53); carapace length 1.70-2.12 (1.94-2.19), width 1.24-1.62 (1.44-1.63), ratio of length/width 1.31-1.37 (1.33-1.35); abdomen length 2.36-2.62 (2.36-3.34), width 1.16-1.44 (1.30-1.84); height of clypeus 0.04-0.08 (0.04-0.05); diameters of AME 0.10-0.13 (0.10-0.12), ALE 0.12-0.18 (0.12-0.15), PME 0.12-0.14 (0.11-0.13), PLE 0.10-0.15 (0.11-0.14); ratio of MOA-L/AW 1.07-1.10 (1.04-1.16), ratio of MOA-AW/PW 0.69-0.75 (0.67-0.77). Measurements of legs are given in table 12.

Male. Carapace yellow, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae yellowish brown, with a lateral condyle at base. Promargin of fang groove armed with 4 teeth, the second largest; retromargin of fang groove armed with 2 teeth (Figure 17E). Labium yellowish brown, longer than wide. Male palp yellowish brown with developed tegulum (Figure 17A). Abdomen pale yellow, longer than wide, without any markings on dorsum. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Spermatheca globular form; bursa oval, larger than spermatheca (Figure 17D).

Distribution. Taiwan (new record) and China.

Remarks.

*Clubiona moralis* was recorded from Taiwan for the first time. Individuals of the species can be found in Taiwan at elevations between 100 m and 1600 m.
Clubiona taiwanica Ono, 1994 台灣袋蛛
(Figure 18, 36)

*C. taiwanica* Ono, 1994: 75, f. 6-9; Song, Zhu and Chen, 1999: 427, f. 251Q-R.
*C. kuanshanensis* Ono, 1994: 76, f. 10-12; Song, Zhu and Chen, 1999: 425, f. 246U-V.
NEW SYNONYMY
NEW SYNONYMY

Specimens examined.

**NANTOU Co.:** LENAI, Meifeng, alt. 2200m, 1 female (NTNUB-Ar 14918), 9-VI-2001, Shyh-Hwang CHEN leg.; LUKU, Chitou, alt. 1050m, 1 female (NTNUB-Ar 9462), 18-II-1994, and 1 male (NTNUB-Ar 1758), 12-II-1997, Shyh-Hwang CHEN leg. **CHIAYI Co.:** ALISHAN, Alishan, 2 males and 1 female (NTNUB-Ar 1868 - 1870), alt. 2200 m, 23-VII-1996, Shyh-Hwang CHEN leg.; same locality, 2 males (NTNUB-Ar 26977, 26979), 16-X-2004, Wen-Juen HUANG leg.

**KAOHSIUNG Co.:** MAOLIN, Shanping, alt. 700m, 1 male (NTNUB-Ar 13353), 6-VI-1995, and 1 male (NTNUB-Ar 13861), 22-VII-1996, Shyh-Hwang CHEN leg.

**PINTUNG Co.:** WUTAI, Chiaokuolatzu, alt. 1500m, 1 female (NTNUB-Ar 17688), 27-VI-2003, Ya-Hui CHEN leg.; TAIWU, Kueiko, alt. 2100m, 2 females (NTNUB-Ar 174 - 175), 1-IV-1994, Shyh-Hwang CHEN leg. **ILAN Co.:** 1 female (NTNUB-Ar 11098), TATUNG, Taipingshan, alt. 1900m, 29-VI-1994, Shyh-Hwang CHEN leg.

**HUALIEN Co.:** HSIULIN, Kuanyuan, alt. 2240m, 1 male and 1 female (NTNUB-Ar 22556, 22562), 12-IV-2004, Ya-Ching YANG leg. **TAITUNG Co.:** HAITUAN, Hsiangyang, alt. 2300m, 24-VII-2004, 4 males and 6 females (NTNUB-Ar 24752, 24755 - 24763), Wen-Juen HUANG leg.; HAITUAN, 3Km SW Wulu, alt. 1800m, 4 males and 6 females (NTNUB-Ar 24047 - 24056), 26-VI-2004, Shyh-Hwang CHEN leg.

Diagnosis. *Clubiona taiwanica* resembles *C. kasanensis* Paik, 1990 occurring in Korea and Japan, but can be distinguished from the latter by having a wider and lower tibial apophysis on male palp (Figure 18A, B). In addition, the female resembles *C. ryukyuensis*, Ono, 1989 but is distinguishable from the latter by the L-form spermatheca (Figure 18F, G).

Description.

Measurements (in mm) for 5 males are followed by those of 5 females (in
parentheses): Body length 5.03-5.22 (4.91-6.24); carapace length 2.38-2.44 (2.09-2.47),
width 1.69-1.84 (1.59-1.78), ratio of length/width 1.32-1.43 (1.31-1.40); abdomen
length 2.66-2.78 (2.81-3.90), width 1.31-1.56 (1.80-2.25); height of clypeus 0.05-0.06
(0.05); diameters of AME 0.10-0.12 (0.09-0.10), ALE 0.13-0.17 (0.12-0.15), PME 0.12
(0.12-0.13), PLE 0.13-0.14 (0.12-0.13); ratio of MOA-L/AW 1.19-1.37 (1.21-1.37),
ratio of MOA-AW/PW 0.59-0.68 (0.59-0.64). Measurements of legs are given in table
13.

Eyes in two parallel transverse rows, not much different in size. Posterior eye row
wider than anterior one, both rows straight. Length of MOA slightly longer than
anterior width, posterior width longer than anterior width. Chelicerae yellowish brown,
armed with 5 promarginal and 4 retromarginal teeth (Figure 18H). Labium yellowish
brown, longer than wide. Male palp yellowish brown, tibial apophysis divided into two
parts; ventral one spatulate, retrolateral one low and wide, bifurcated (Figure 18B).
Tegular apophysis developed and strongly sclerotized, embolus short and rostrated,
with membranous conductor (Figure 18A). Abdomen longer than wide, brown cardiac
pattern on dorsum. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Genital openings
situated in the anterior part of the epigynum and covered by sclerotized plated (Figure
18C-E). Bursa a bladder organ, large and soft, spermathecae tubular (Figure 18F, G).

**Distribution.** Endemic to Taiwan.

**Remarks.**

Ono (1994) first described *Clubiona taiwanica* (female only), *C. bonicula* (male
only) and *C. kuanshanensis* (female only) with illustrations from Taiwan. Accordingly,"C. taiwanica" can be distinguished from *C. kuanshanensis* by the constricted
spermatheca. However, after carefully examining the specimens collected from various
localities of Taiwan including the populations at or near the type localities, the palpal
organs of males from Alishan, Kuanyuan (near Hohuanshan, the type locality of *C.
taiwanica* and *C. bonicula*) and Hsiangyang (near the type locality of *C. kuanshanensis*)
were identical. The spermathecae of *C. taiwanica* from Alishan and Kuanyuan were
identical to those figures in Ono (1994: 76), However, the constriction in their
spermathecae is variable, some specimens were not constricted in their spermathecae as
those females from Hsiangyang. The minor difference of epigynum among populations
Alisan, Kuanyuan and Hsianyang were considered as interspecific variations. Therefore,
I considered females from Hsiangyang were idencial to *C. taiwanica*. Moreover, all
specimens from these populations have 3 pairs of ventral spines on the metatarsi I and
II also suggest these spiders are conspecific. Therefore I considered that C. taiwanica, C. bonicula and C. kuanshanensis are conspecific and both C. bonicula and C. kuanshanensis should be the junior synonymies of C. taiwanica.

*Clubiona tanikawai Ono, 1989* 瀧川氏袋蛛

(Figure 19, 36)


**Specimens examined**

**TAIPEI Co.:** KONGLIAO, Yuanwangkeng, alt. 300m, 1 male and 2 females (NTNUB-Ar 22757 - 22759), 30-V-2004, Wen-Juen HUANG leg.; PINGLIN, Shihpai, alt. 550m, 1 female (NTNUB-Ar 7179), 8-III-1997, Shyh-Hwang CHEN leg.

**NANTOU Co.:** LUKU, Chitou, alt. 1050m, 1 male (NTNUB-Ar 1003), 18-II-1994, Shyh-Hwang CHEN leg. **CHIAYI Co.:** ALISHAN, Alishan, alt. 2200m, 1 male (NTNUB-Ar 26980), 16-X-2004, Wen-Juen HUANG leg. **ILAN Co.:** TOUCHEN, Dali, alt. 100m, 1 male (NTNUB-Ar 21711), 12-VIII-1996, Wen-Juen HUANG leg.; CHIAOCHI, Chiaochi, alt. 300m, 1 female (NTNUB-Ar 508), 14-IV-2000, Wen-Jean HUANG leg.; same locality, alt. 300m, 1 male (NTNUB-Ar 617), 13-V-2000, Shyh-Hwang CHEN leg.; TATUNG, Chilan, 1 female (NTNUB-Ar 7380), alt. 500m, 31-III-1997, Shyh-Hwang CHEN leg.; TATUNG, Taipingshan, alt. 1900m, 1 male (NTNUB-Ar 11096), 29-VI-1994, Shyh-Hwang CHEN leg.

**Diagnosis.** *Clubiona tanikawai* resembles *C. yangmingensis* Hayashi et Yoshida, 1993 occurring in Taiwan, in body size, but can be distinguished from the latter by the spatulate tibial apophysis on the male palp (Figure 19B) and having two large genital openings in female epigynum (Figure 19C).

**Description.**

Measurements (in mm) for 5 males are followed by those of 5 females (in parentheses): Body length 2.36-3.14 (2.58-3.38); carapace length 1.10-1.40 (1.22-1.32), width 0.82-0.96 (0.84-0.96), length/width 1.27-1.38 (1.30-1.45); abdomen length 1.22-1.74 (1.36-2.16), width 0.84-0.98 (0.86-1.44); height of clypeus 0.03 (0.03); diameters of AME 0.06-0.08 (0.05-0.08), ALE 0.09-0.10 (0.08-0.10), PME 0.08-0.10 (0.07-0.09), PLE 0.09-0.10 (0.06-0.09); MOA-L/AW 1.00-1.06 (0.84-0.94), MOA-AW/PW 0.57-0.65 (0.59-0.67). Measurements of legs are given in table 14.
Male. Carapace yellowish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size, but AME slightly smaller than others. Posterior eye row wider than anterior one, AER straight, PER slightly procurred. Length of MOA as long as anterior width, posterior width longer than anterior width. Chelicerae brown armed with 5 promarginal and retromarginal teeth (Figure 19E). Male palp brown, embolus spiniform (Figure 19B), tibial apophysis spatulate (Figure 19A). Abdomen pale yellow, longer than wide, without markings. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Epigynum with two genital openings (Figure 19C). Both spermatheca and bursa globular form (Figure 19D).

**Distribution.** Taiwan and Japan.

**Remarks.**

*Clubiona tanikawai* was widespread in Taiwan. Specimens of the species were collected at elevations between 300 m and 2200 m in Taiwan.

*Clubiona viridula* Ono, 1989 草綠袋蛛

(Figure 20, 36)

*C. viridula* Ono, 1989: 161, f. 16-20; Deeleman-Reinhold, 2001: 100, f. 8-11.

**Specimens examined**

TAIPEI Co.: 1 female (NTNUB-Ar 19252), WULAI, Hsinhsien, alt. 400m, 8-VII-1994, Ying-Ying CHUANG leg.

**Diagnosis.** *Clubiona viridula* resembles *C. parallelos* Yin et al., 1996 but can be distinguished from the latter by the wider copulatory ducts and both ducts are close to the spermathecae (Figure 20C, D).

**Description.**

Measurements (in mm) of 1 female: Body length 5.63; carapace length 2.44, width 1.72, ratio of length/width 1.42; abdomen length 3.19, width 1.88; hight of clypeus 0.06; diameters of AME 0.12, ALE 0.14, PME 0.12, PLE 0.12; ratio of MOA-L/AW 1.04, ratio of MOA-AW/PW 0.58. Measurements of legs are given in table 15.

Female. Carapace yellowish brown, longer than wide. Thoracic groove
longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae yellowish brown, armed with 3 promarginal and 2 retromarginal teeth (Figure 20B). Labium yellowish brown, longer than wide. Abdomen pale yellow, longer than wide, without any marking. Epigynum with two genital openings situated near epigastric furrow (Figure 20A). Bursa globular smaller than spermatheca; spermatheca claviform (Figure 20C, D). Leg formula 4-2-1-3.

Male. Not examined.

Distribution. Taiwan (new record) and Japan.

Remarks.

Clubiona viridula was recorded from Taiwan for the first time. Only one female specimen was collected and described.

Clubiona yaginumai Hayashi, 1989 八木沼氏袋蛛
(Figure 21, 37)


Specimens examined.

TAOYUAN Co.: FUHSING, Sanming, alt. 450m, 1 male (NTNUB-Ar 7640), 2-IV-1997, Shyh-Hwang CHEN leg. NANTOU Co.: LUKU, Fenghuangku, alt. 700m, 1 male (NTNUB-Ar 19881), 17-IX-1995, Shyh-Hwang CHEN leg. TAINAN Co.: PAIHO, Kuantzeling, alt. 350m, 1 male (NTNUB-Ar 10315), 6-IV-2000, Yi-Ting CHEN leg. HUALIEN Co.: SHOUFENG, Liyutan, alt. 150m, 1 male (NTNUB-Ar 24914), 2-III-2004, Hon-Zen WEI leg. TAITUNG Co.: HAITUAN, 3Km SW Wulu, alt. 1800m, 1 male (NTNUB-Ar 24061), 26-VI-2004, Shyh-Hwang CHEN leg.

Diagnosis. Clubiona yaginumai resembles C. femorocalcarata sp. nov. but can be recognized from the latter by the short tibial apophysis on male palp (Figure 21B) and lacking distal spur on femur of male palp.

Description.

Measurements (in mm) for 5 males: Body length 4.00-5.22; carapace length
1.59-2.09, width 1.16-1.50, ratio of length/width1.37-1.49; abdomen length 2.28-3.13, width 0.81-0.97; height of clypeus 0.05-0.06; diameters of AME 0.06-0.08, ALE 0.08-0.10, PME 0.08-0.09, PLE 0.08-0.12; ratio of MOA-L/AW 1.14-1.23, ratio of MOA-AW/PW 0.48-0.52. Measurements of legs are given in table 16.

Male. Carapace pale yellow, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae pale yellow armed with 3 promarginal and 2 retromarginal teeth (Figure 21C). Labium pale yellow, longer than wide. Male palp organ simple, bulb swollen, embolus short (Figure 21A), with a small tibial apophysis (Figure 21B). Abdomen pale yellow, without any markings on dorsum, dark markings at epigastric area. Leg formula 4-2-1-3.

Female. Not examined.

Distribution. Taiwan and Japan.

Remarks.

*Clubiona yaginumai* was wide-ranged distributed from Taiwan at elevations between 100 m and 1800 m.

*Clubiona yangmingensis* Hayashi et Yoshida, 1993 陽明山袋蛛
(Figure 22, 37)


Specimens examined.
KEELUNG CITY: Nuanuan, alt. 100m, 1 male and 1 female (NTNUB-Ar 7057 - 7058), 7-III-1997, Shyh-Hwang CHEN leg. TAIPEI CITY: WENSHAN, HsiENCHIYEN, alt. 100m, 1 male (NTNUB-Ar 8327), 27-XII-1998, Jui-Lung HSIAO leg. TAIPEI Co.: WANLI, Chungfu, alt. 100m, 1 male and 1 female (NTNUB-Ar 18496 - 18497), 29-V-2003, Shyh-Hwang CHEN leg.; KUNGLIAO, Yuanwangkeng, alt. 300m, 1 female (NTNUB-Ar 21809), 20-II-2004, 1 male and 1 female (NTNUB-Ar 22764 - 22765), 30-V-2004, and 1 female (NTNUB-Ar 24094), 14-VII-2004, Wen-Juen HUANG leg.; PINGHSI, Pinghsi, alt. 250m, 2 males (NTNUB-Ar 19148 - 19149), 17-IX-2003, Shyh-Hwang CHEN leg.; SHIHTING, Shihting, alt. 250m, 1 male and 1 female (NTNUB-Ar 13730 - 13731), 3-VI-2000, Shyh-Hwang CHEN leg.; SHIHTING,

**Diagnosis.** *Clubiona yangmingensis* can be distinguished from other congeners by having two tegular apophysis on the bulb of male palp (Figure 22A, B) and the reiniform spermatheca (Figure 22C).

**Description.**

Measurements (in mm) for 5 males are followed by those of 5 females (in parentheses): Body length 2.80-3.46 (2.98-3.62); carapace length 1.22-1.56 (1.24-1.50),
width 0.94-1.08 (0.92-1.02), ratio of length/width 1.30-1.44 (1.34-1.47); abdomen length 1.46-1.90 (1.70-2.28), width 1.86-0.98 (0.94-1.42); height of clypeus 0.01-0.03 (0.01-0.03); diameters of AME 0.06 (0.06-0.07), ALE 0.08-0.12 (0.08-0.09), PME 0.08-0.09 (0.08-0.09), PLE 0.08-0.10 (0.07-0.09); ratio of MOA-L/AW 0.94-1.14 (0.91-1.21), ratio of MOA-AW/PW 0.58-0.67 (0.63-0.67). Measurements of legs are given in table 17.

Male. Carapace yellowish brown, longer than wide. Thoracic groove longitudinal. Eyes in two parallel transverse rows, not much different in size. Posterior eye row wider than anterior one, both rows straight. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae yellowish brown, armed with 5 promarginal and 6 retromarginal teeth (Figure 22E). Labium yellowish brown, longer than wide. Male palp yellowish brown, bulb with two tegular apophysis, the proximal one long and extending backward, the distal one short (Figure 22A, B). Abdomen pale yellow, longer than wide, without any markings. Leg formula 4-2-1-3.

Female. Similar to males in general aspects and color pattern. Genital opening small and indistinct, situated in posterior part of epigynum (Figure 22C), spermatheca reniform (Figure 22D).

**Distribution.** Endemic to Taiwan.

**Remarks.**

*Clubiona tanikawai* was endemic to Taiwan and widespreaded through the island. It was found at elevations between 100 m and 2500 m in Taiwan.
Genus *Matidia* Thorell, 1878 馬蒂蛛屬

*Matidia* Thorell, 1878: 182

Type species: *Matidia virens* Thorell, 1878

Diagnosis. *Matidia* resembles *Pristidia*, *Malamatidia* and *Nustidia*, but can be distinguished from these genera by the first pair of legs longer than both the second and the fourth pairs. In addition, it can be distinguished from *Cheirancanthium* by lacking retrolateral spur on the cymbium of male palp (Deeleman-Reinhold, 2001).

Distribution. — Sri Lanka, Southern Thailand, Borneo, Sulawesi, Moluccas, West Irian, Philippines (Deeleman-Reinhold, 2001) and Taiwan (new record).

*Matidia spatulata* sp. nov. 鏟形馬蒂蛛

(Figure 23, 38)

**Type series.** Holotype: male (NTNUB-Ar 7386), Chilan, TATUNG, ILAN Co. alt. 500m, 31-III-1997, Shyh-Hwang CHEN leg. Paratype: 1 male (NTNUB-Ar 21666), Kuantzeling, PAIHO, TAINAN Co. alt. 350m, 14-III-2004, Shyh-Hwang CHEN leg.

**Diagnosis.** *Matidia spatulata* can be distinguished from other congeners by the spatulate tibial apophysis on male palp (Figure 23B).

**Description.**

Measurements (in mm) (based on holotype): Body length 5.54; carapace length 2.16, width 1.58, ratio of length/width 1.37; abdomen length 3.38, width 0.92; height of clypeus 0.05; diameters of AME 0.09, ALE 0.12, PME 0.10, PLE 0.12; ratio of MOA-L/AW 1.15, ratio of MOA-AW/PW 0.56; length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 11.89 = 3.09 + 4.70 + 2.72 + 1.38, II 10.03 = 2.69 + 4.00 + 2.19 + 1.16, III 6.06 = 1.72 + 2.09 + 1.59 + 0.66, IV 10.28 = 3.03 + 3.25 + 3.13 + 0.88.

Male (holotype). Carapace greenish yellow, longer than wide, somewhat flattened. Thoracic groove short and shallow. Eyes in two parallel transverse rows, not much different in diameter. Posterior eye row wider than anterior one. Length of MOA slightly longer than anterior width, posterior width longer than anterior width. Chelicerae armed with 3 promarginal and 2 retromarginal teeth, the distal-most tooth of the promargin is closer to fang-base than is the distal-most tooth of the retromargin (Figure 23C).
Labium greenish yellow, longer than wide. Male palp greenish yellow, palpal embolus ribbon-shaped (Figure 23A), palpal tibial apophysis spatulate. (Figure 23B). Abdomen greenish yellow, long slender, without markings dorsally. Leg formula 1-4-2-3.

**Variations.** Measurements (in mm) including types given for 2 males. Body length 5.54-5.67; carapace length 2.16-2.20, width 1.50-1.58, ratio of length/width 1.37-1.47; abdomen length 3.38-3.47, width 0.92-0.94; height of clypeus 0.05; diameters of AME 0.09-0.10, ALE 0.12, PME 0.10-0.12, PLE 0.12; ratio of MOA-L/AW 1.15, ratio of MOA-AW/PW 0.56. Measurements of leg segments are shown as table 18.

**Distribution.** Taiwan.

**Etymology.** The specific name of this new spider is derived from spatulate tibial apophysis on male palp.

**Remarks.**

*Matidia spatulata* sp. nov. was endemic to Taiwan. It was described based on the male holotype and male paratype.
Genus *Cheiracanthium* C.L. Koch, 1839 紅螯蛛屬

*Cheiracanthium* C.L. Koch, 1839: 9.

Type species: *Cheiracanthium punctorium* (Villers, 1789)

**Diagnosis.**

*Cheiracanthium* can be distinguished from *Clubiona* by having retrolateral spur on male palpal cymbium and the first pair of legs longer than both the second and the forth pairs (Deeleman-Reinhold, 2001).

**Distribution.** — Worldwide (Deeleman-Reinhold, 2001).

**Key to species occurring in Taiwan.**

1. a. Carapace with dark longitudinal marks (Figure 30A). - *Cheiracanthium taiwanica*
   
   b. Carapace without dark longitudinal marks.----------------------------------------2
2. a. Thoracic groove area indicated with dark pigment. ----------------------------- *C. insulanum*
   
   b. Thoracic groove area without any markings.--------------------------------------3
3. a. Male.--------------------------------------------------------------------------4
   
   b. Female.------------------------------------------------------------------------9
4. a. Basal spur of cymbium longer than palpal tibial apophysis (Figure 26A). -------5
   
   b. Basal spur of cymbium as long as palpal tibial apophysis (Figure 29A).--------7
5. a. Median apophysis of palpal bulb spiniform.---------------------------------------6
   
   b. Median apophysis of palpal bulb membraneous (Figure 26A).--------------------- *C. falcatum*
6. a. Palpal cybium spur intored (Figure 31A).---------------------------------------- *C. torsivum*
   
   b. Palpal cybium spur long and thin (Figure 27A).-------------------------------- *C. filiapophysis*
7. a. Median apophysis of palpal bulb membraneous.------------------------------------ *C. eutitha*
   
   b. Median apophysis of palpal bulb lacking or not seen.-------------------------------7
8. a. Palpal tibial apophysis finger-like.---------------------------------------------- *C. mordax*
   
   b. Palpal tibial apophysis wide, sickle-like.---------------------------------------- *C. antungensis*
9. a. Copulatory duct spiral coiled (Figure 29A).------------------------------------- *C. mordax*
   
   b. Copulatory duct without spiral coiled.-------------------------------------------10
10.a. Spermatheca divided to two containers, one smaller, another larger.--------------- *C. mordax*
   
   b. Spermatheca not divided to two containers.--------------------------------------- *C. falcatum*
11.a. Spermatheca piriform (Figure 27C).---------------------------------------------- *C. filiapophysis*
   
   b. Spermatheca wasn’t piriform.---------------------------------------------------12
12.a. Claviform markings seen through tegument in epigynum.-------------------------- *C. eutitha*
   
   b. Globular markings seen through tegument in epigynum.------------------------------- *C. torsivum*
Cheiracanthium antungensis sp. nov. 安通紅螯蛛
(Figure 24, 39)

Type series. Holotype: male (NTNUB-Ar 11710), Antung, YULI, HUALIEN Co. alt. 150m, 22-VI-2002, Shyh-Hwang CHEN leg.

Diagnosis. Cheiracanthium antungensis resembles C. filiapophysis sp. nov. and can be distinguished from the latter by the wide, sickled tibial apophysis and lacking the median apophysis on the male palp (Figure 24A, B).

Description.
Measurements (in mm) (based on the holotype): Body length 6.75; carapace length 2.75, width 2.06, ratio of length/width 1.33; abdomen length 4.00, width 2.06; diameters of AME 0.15, ALE 0.14, PME 0.15, PLE 0.14; ratio of MOA-L/AW 1.10, ratio of MOA-AW/PW 0.83; length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 18.19 = 4.56 + 6.31 + 5.31 + 2.00, II 11.38 = 3.06 + 3.94 + 3.31 + 1.06, III 8.31 = 2.25 + 2.63 + 2.56 + 0.88, IV 14.22 = 3.97 + 4.63 + 4.50 + 1.13.

Male (holotype). Carapace yellow brown, longer than wide, without thoracic groove. Chelicerae and endites brown. Eyes almost equal in diameter, in two rows occupying the greater width of head. Posterior eye row straight, anterior eye row slightly procurved. Length of MOA longer than anterior width; posterior width than anterior width. Chelicerae with 3 promarginal and retromargin teeth, second tooth of promargin large (Figure 23C). Labium brown, longer than wide. Palpal tibial apophysis wide, sickle-shaped, palpal cymbial spur short (Figure 23A, B). Leg formula: 1-4-2-3. Abdomen pale yellow, longer than wide, pale grayish cardiac pattern dorsally.

Distribution. Endemic to Taiwan and known only from the type locality.

Etymology. The specific name was derived from Antung, a village in eastern Taiwan, where the holotype was obtained.

Remarks.
Only one male holotype of Cheiracanthium antungenesis was described. It is known only from Antung, Hualien County, the type locality.
Cheiracanthium eutittha Bösenberg et Strand, 1906 長腿紅螯蛛
(Figure 25, 39)


Specimens examined.
TAIPEI CITY: WENSHAN, Maokong, alt. 200m, 1 male (NTNUB-Ar 14049), 1-VIII-2002, Shyh-Hwang CHEN leg. TAIPEI Co.: PINGLIN, Chiuchiunglin, alt. 200m, 1 female (NTNUB-Ar 5448), 4-IX-1999, Shyh-Hwang CHEN leg.; HSINTIEN, Szukanshui, alt. 500m, 1 female (NTNUB-Ar 17954), 27-X-2003, Shyh-Hwang CHEN leg.; SHIHTING, Huangtitien, alt. 250m, 1 female (NTNUB-Ar 8660), 31-V-1995, Shyh-Hwang CHEN leg.; SHIHTING, Mt. Erhko, alt. 450m, 1 female (NTNUB-Ar 14588), 30-VIII-2002, Shyh-Hwang CHEN leg.; PINGHSI, Pinghsi, alt. 250m, 1 female (NTNUB-Ar 19121), 17-IX-2003, Shyh-Hwang CHEN leg.; KUNGLIAO, Yuanwangkeng, alt. 300m, 1 male (NTNUB-Ar 24096), 14-VII-2004, Wen-Juen HUANG leg. HSINCHU Co.: CHIUNGLIN, Feifengshan, alt. 250m, 2 females (NTNUB-Ar 8601 - 8602), 10-X-1999, Shyh-Hwang CHEN leg. NANTOU Co.: TSAOTUN, Kanshi, alt. 300m, 2 females (NTNUB-Ar 4761 - 4762), 3-V-2004, Shyh-Hwang CHEN leg.; TSAOTUN, Shuangtung, alt. 150m, 1 female (NTNUB-Ar 4760), 3-V-2004, Shyh-Hwang CHEN leg. PINTUNG Co.: MANCHOU, Nanshantsun, alt. 250m, 1 male (NTNUB-Ar 13492), 12-IX-1984, Shyh-Hwang CHEN leg. ILAN Co.: TOUCHENG, Tali, alt. 200m, 2 males and 5 females (NTNUB-Ar 1507 - 1513), 12-VIII-1996, Wen-Juen HUANG leg.; TOUCHENG, Hsanghsin Garden, alt. 500m, 1 female (NTNUB-Ar 5434), 4-IX-1999, Shyh-Hwang CHEN leg.; CHIAOCHI, 3Km N Chiaochi, alt. 200m, 1 female (NTNUB-Ar 5387), 9-IX-1999, Wen-Jean HUANG leg.; CHIAOCHI, Chiaochi, alt. 300m, 2 males (NTNUB-Ar 646 - 647), 13-V-2000, Shyh-Hwang CHEN leg.

Diagnosis. Cheiracanthium eutittha can be distinguished from other congeners by the short tibial apophysis and the short cymbial spur on male palp (Figure 25A, B) and the dumbbell-shaped markings seen through tegument in female epigynum (Figure 25C).
Description.

Measurements (in mm) for 5 males are followed by those of 5 females (in parentheses): Body length 8.20-9.60 (9.10-11.10). Carapace length 3.40-4.50 (3.50-4.90), width 2.60-3.60 (2.60-3.80), ratio of length/width 1.21-1.31 (1.25-1.35); abdomen length 4.70-5.70 (5.30-6.60), width 2.20-2.90 (3.00-3.80); diameters of AME 0.18-0.23 (0.18-0.22), ALE 0.15-0.23 (0.15-0.22), PME 0.15-0.23 (0.15-0.21), PLE 0.15-0.21 (0.15-0.21); ratio of MOA-L/AW 0.89-1.00 (0.92-0.96), ratio of MOA-AW/PW 0.86-0.92 (0.82-0.88). Measurements of legs are given in table 19.

Male. Carapace yellowish brown, longer than wide, without thoracic groove. Eyes in two parallel transverse rows, equal in diameter. Posterior eye row straight, anterior eye row slightly procurved. Length of MOA longer than its anterior width; posterior width longer than anterior width. Chelicerae with 3 promarginal and retromargin teeth (Figure 25E). Labium longer than wide. Palpal cymbium long, with a short retrolateral spur, palpal tibial apophysis short (Figure 25B). Median apophysis of bulb membranous (Figure 25A). Abdomen pale yellow, longer than wide, pale grayish cardiac pattern dorsally. Leg formula 1-2-4-3.

Female: Similar to males in general aspects and color pattern. Spermatheca piriform, connected with copulatory duct (Figure 25D). Ventral view: part of dark copulatory duct and spermatheca seen as dumbbell-shaped marking through tegument (Figure 25C). Leg formula 1-4-2-3.

Distribution. Korea, Japan and Taiwan (new record).

Remarks.

*Cheiracanthium eutittha* was recorded from Taiwan for the first time. It can be found at elevations between 200 m and 600 m in Taiwan.
Cheiracanthium falcatum sp. nov. 鰾形紅螯蛛
(Figure 26, 39)

**Type series.** Holotype: female (NTNUB-Ar 19049), Chitou, LUKU, NANTOU Co., alt. 1150m, 17-VII-2003, Wen-Juen HUANG leg. Paratypes: 2 males (NTNUB-Ar 19048, 19050), data same as in holotype, 1 male (NTNUB-Ar 4768), Yuchekeng, TSAOTUN, NANTOU Co., alt. 300m, 28-VII-2000, Shyh-Hwang CHEN leg.

**Other specimens examined.**


**Diagnosis.** Cheiracanthium falcatum can be distinguished from most other congeners by the fingerlike tibial apophysis and the long curved cymbial spur in the male palp (Figure 26A, B). The female copulatory duct coils three spirals then leading downward to the spermatheca (Figure 26C, D). The new species most resembles C. ningmingensis Zhang et Yin, 1999 in the male palp organ, but differs from the latter by having thicker tibial apophysis.

**Description.**

Measurements (in mm) (based on the holotype (NTNUB-Ar 19049) and paratype male (NTNUB-Ar 19048; in parentheses)): Body length 8.50 (7.65); carapace length 3.50 (3.15), width 2.70 (1.90), ratio of length/width 1.66 (1.30); abdomen length 5.00 (4.50), width 2.70 (2.30); diameters of AME 0.18 (0.15), ALE 0.15 (0.15), PME 0.15 (0.13), PLE 0.15 (0.13); ratio of MOA-L/AW 1.06 (0.86), ratio of MOA-AW/PW 0.89
Female (holotype). Carapace yellow brown, longer than wide, without thoracic groove. Chelicerae and endites brown. Eyes almost equal in diameter, in two rows occupying the greater width of head. Posterior eye row straight, anterior eye row slightly procurved. Anterior width of MOA longer than length; posterior width longer than anterior width. Chelicerae with 3 promarginal and retromargin teeth, second tooth of promargin large(Figure 26E). Labium brown, longer than wide. Leg formula: 1-4-2-3. Epigynum with posterior depression, both copulatory openings on sides, each copulatory duct coils three spirals then leading to spermatheca (Figure 26D). Part of dark copulatory duct and spermatheca seen though tegument(Figure 26C). Abdomen pale yellow, longer than wide, with a pale grayish cardiac pattern dorsally.

Male ((NTNUB-Ar 19048). Similar to females in general aspects and color pattern. Palpal tibial apophysis fingerlike. Cymbium with long curved retrolateral spur (Figure 26A, B).

**Variations.** Measurement (in mm) including types given for 4 males are followed by those of 6 females (in parentheses). Body length 7.30-8.80 (7.65-12.00); carapace length 3.00-3.80 (3.10-4.40), width 2.10-2.70 (1.90-3.30), ratio of length/width 1.38-1.66 (1.30-1.47); abdomen length 4.30-5.00 (4.50-7.00), width 1.90-2.70 (2.30-4.40); diameters of AME 0.18-0.21 (0.15-0.21), ALE 0.15-0.19 (0.15-0.21), PME 0.15-0.18 (0.13-0.18), PLE 0.15-0.18 (0.13-0.21); ratio of MOA-L/AW 0.92-1.06 (0.86-1.00), ratio of MOA-AW/PW 0.89-0.92 (0.83-0.89). Measurements of leg segments are shown as table 20.

**Distribution.** Endemic to Taiwan.

**Etymology.** The specific name is derived from the sickle-shaped cymbial spur on male palp. The word “falcatum” means “sickle-shaped”.

**Remarks.**

*Cheiracanthium falcatum* was endemic to Taiwan and widespread in the island. It can be found at lower elevations between 200 m and 800 m in Taiwan.
Cheiracanthium filiapophysis sp. nov. 絲距紅螯蛛
(Figure 27, 40)

Type series. Holotype: male (NTNUB-Ar 24039), Wulu, HAITUAN, TAITUNG Co., alt. 1800m, 26-VI-2004, Shyh-Hwang CHEN leg. Paratypes: 1male, 3females (NTNUB-Ar 24041 - 24044), data same as in holotype.

Other specimens examined.
   PINTUNG Co.: 1 female (NTNUB-Ar 17810), WUTAI, Sungshan, alt. 2000m, 26-VI-2003, Ya-Hui CHEN leg.

Diagnosis. Cheiracanthium filiapophysis resembles C. torsivum sp. nov. and can be distinguished from the latter by the long, thin and curved cymbial spur (Figure 27A, B) and the piriform spermatheca (Figure 27C, D).

Description.
   Measurements (in mm) (based on the holotype male and the paratype female (NTNUB-Ar 24041, in parentheses)): Body length 6.13 (9.63); carapace length 2.56 (3.06), width 1.94 (2.18), ratio of length/width 1.32 (1.40); abdomen length 3.56 (6.56), width 1.50 (4.25); diameters of AME 0.14 (0.14), ALE 0.14 (0.16), PME 0.14 (0.16), PLE 0.14 (0.15); ratio of MOA-L/AW 1.15 (1.00), ratio of MOA-AW/PW 0.76 (0.77); length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 18.81 = 4.50 + 6.38 + 5.94 + 2.00 (14.50 = 3.63 + 5.06 + 4.25 + 1.56), II 11.88 = 3.06 + 4.13 + 3.50 + 1.19 (9.06 = 2.50 + 3.25 + 2.38 + 0.94), III 8.56 = 2.25 + 2.69 + 2.75 + 0.88 (7.06 = 1.88 + 2.38 + 2.00 + 0.81), IV 13.81 = 3.50 + 4.44 + 4.56 + 1.31 (11.13 = 2.94 + 3.88 + 3.25 + 1.06).

Male (holotype). Carapace yellowish brown, longer than wide, without thoracic groove. Eyes equal in diameter, in two rows occupying the greater width of head. Posterior eye row straight, anterior eye row slightly procured. Anterior width of MOA as long as length; posterior width longer than anterior width. Chelicerae with 3 teeth on each promargin and retromargin of fang groove (Figure 27E). Palpal bulb developed, with a spiniform median apophysis (Figure 27A). Abdomen yellow, longer than wide, pale-grayish cardiac pattern dorsally. Leg formula: 1-4-2-3.

   Female (NTNUB-Ar 24041). Similar to males in general aspects and color pattern. Epigynum with a central depression, and dark piriform spermatheca seen through tegument (Figure 27C).
Variations. Measurements (in mm) including types given for 2 males are followed by those of 3 females (in parentheses). Body length 6.13-6.88 (6.38-9.63); carapace length 2.56-2.88 (2.88-3.06), width 1.94-2.25 (2.06-2.19), length/width 1.28-1.32 (1.37-1.40); abdomen length 3.56-4.00 (3.50-6.56), width 1.50-1.81 (2.13-4.25); diameters of AME 0.14-0.18 (0.14-0.16), ALE 0.14-0.16 (0.16-0.19), PME 0.14-0.16 (0.14-0.16), PLE 0.14-0.16 (0.14-0.15); ratio of MOA-L/AW 1.06-1.15 (0.94-1.00), ratio of MOA-AW/PW 0.76-0.85 (0.77-0.83). Measurements of leg segments are shown as table 21.

Distribution. Endemic to Taiwan.

Etymology. The specific name is derived from the thin, long and curved cymbial spur on male palp. The word “filiapophysis” means “filiform apophysis”.

Remarks. Cheiracanthium filiapophysis was endemic to Taiwan and known only from the southern part of Taiwan. It can be found at elevations between 1800 m and 2000 m in Taiwan.

Cheiracanthium insulanum (Thorell, 1878) 島嶼紅螯蛛
(Figure 28, 40)

Eutittha insulana Thorell, 1878: 198.
C. adjacensoides Song, Chen and Hou, 1990: 427, f.1-4; Song, Zhu and Chen, 1999: 412, f. 241E-F, 243C-D.
C. bikakapenalcolium Barrion and Litsinger, 1995: 165, f.94.

Specimens examined.

TAICHUNG Co.: HOPING, Kukuan, alt. 700m, 1 male (NTNUB-Ar 21931), 27-I-2004, Wen-Juen HUANG leg. NANTOU Co.: TSAOTUN, Shuangtung, Yuchekeng, alt. 300m, 9 females (NTNUB-Ar 4700 – 4708), 13-II-2004, Shyh-Hwang
CHEN leg. **ILAN Co.**: DONGSHAN, Tahjinn, alt. 200m, 1 male (NTNUB-Ar 6731), 10-II-2000, Shyh-Hwang CHEN leg.; SUAO, Tungao, alt. 50m, 1 male (NTNUB-Ar 9179), 24-V-1998, Shyh-Hwang CHEN leg. **HUALIEN Co.**: YULI, Sanming, alt. 100m, 1 female (NTNUB-Ar 9287), 13-XI-1999, Shyh-Hwang CHEN leg.; YULI, Antung, alt. 150m, 1 male (NTNUB-Ar 11732), 22-VI-2002, and 1 female (NTNUB-Ar 24315), 24-IV-2004. Shyh-Hwang CHEN leg. **TAITUNG Co.**: TUNGHO, Taiyuan, alt. 100m, 1 male (NTNUB-Ar 24218), 12-VII-2004, Wen-Juen HUANG leg.; TUNGHO, Tulan, alt. 100m, 1 male (NTNUB-Ar 18309), 27-VI-2003, and 1 male (NTNUB-Ar 24352), 25-IV-2004, Shyh-Hwang CHEN leg.; CHIHSHANG, 2.5Km S Wan-an, alt. 250m, 1 female (NTNUB-Ar 11762), 23-VI-2002, Shyh-Hwang CHEN leg.; CHINFENG, Manuerhchi, alt. 500m, 3 females (NTNUB-Ar 14979 - 14981), 13-VIII-1993, Shyh-Hwang CHEN leg.

**Diagnosis.** *Cheiracanthium insulanum* can be distinguished from other congeners by dark chelicerae, dark brown endites and labium. Male palpal tibial apophysis sinuates feebly (Figure 28A). The epigyne has an oval depression in the middle and S-shaped insemination ducts which curve laterally and anteriorly around the depression (Figure 28C).

**Description.**

Measurements (in mm) for 10 males are followed by those of 6 females (in parentheses): Body length 5.65-7.95 (6.10-8.00). Carapace length 2.70-3.70 (2.47-3.25), width 2.00-2.80 (2.00-2.45), ratio of length/width 1.24-1.45 (1.33-1.46); abdomen length 2.95-4.25 (3.40-5.05), width 1.60-2.50 (2.05-3.55); diameters of AME 0.18-0.21 (0.14-0.16), ALE 0.16-0.21 (0.16-0.19), PME 0.16-0.19 (0.13-0.18), PLE 0.18-0.18 (0.13-0.16); ratio of MOA-L/AW 0.92-1.04 (0.93-1.00), ratio of MOA-AW/PW 0.81-0.96 (0.83-0.90). Measurements of legs are given in table 22.

Male. Carapace pale yellow, longer than wide, with dark streak in thoracic groove region. Eyes in two parallel transverse rows, equal in diameter. Posterior eye row wider than anterior row, both rows straight. Length of MOA equals to anterior width, posterior width longer than anterior width. Chelicerae dark brown, armed with 3 teeth on each promarginal and retromarginal fang groove (Figure 28E). Labium dark brown, length equals width. Male palp dark brown, cymbial margin expanded laterally (Figure 28A). Palpal tibial apophysis faintly sinuated (Figure 28B). Abdomen pale yellow, longer than wide, with a grayish cardiac pattern dorsally. Leg formula 1-4-2-3.

Female. Similar to males in general aspects and color pattern. Legs shorter than those of males, especially leg I. Epigynum with oval depression in middle, both copulatory openings on sides (Figure 28C); each copulatory duct directed forward, then
backward through S-shaped duct leading to spermatheca (Figure 28D). Part of dark copulatory duct seen through tegument (Figure 28C).

**Distribution.** Myanmar, Thailand, Indonesia, Philippines, China and Taiwan.

**Remarks.**

*Cheiracanthium insulanum* was widespread in Taiwan. Individuals of the species can be found at lower elevations between 200 m and 800 m in Taiwan.

*Cheiracanthium mordax* L. Koch, 1866. 摩紅螯蛛

(Figure 29, 40)

*C. mordax* L. Koch, 1866: 262, pl. 11, f. 167; L. Koch, 1873: 403, pl. 31, f. 5; Main, 1964: 76, f. A-F; Dondale, 1966: 1178, f. 6F-J.

*C. diversum* L. Koch, 1873: 396, pl. 32, f. 2; Marples, 1959: 364, f. 1.

*C. gilvum* L. Koch, 1873: 419, pl. 32, f. 5-6.


**Specimens examined**

TAOYUAN Co.: YANGMEI, Sanhu, alt. 150m, 1 male and 1 female (NTNUB-Ar 8246 - 8247), 15-XI-1998, Shyh-Hwang CHEN leg.

**Diagnosis.** *Cheiracanthium mordax* can be distinguished from other congeners by having a short and small tibial apophysis and a short cymbial spur in male palp (Figure 25A, B). The female has a dumbbell-shaped spermatheca and a coiled copulatory duct on the anterior larger portion (Figure 29C, D).

**Description:**

Measurements (in mm) for 1 male are followed by those of 1 female (in parentheses): Body length 6.10 (5.05). Carapace length 3.40 (2.75), width 2.70 (2.30), ratio of length/width 1.26 (1.20); abdomen length 4.80 (4.50), width 2.50 (2.80); diameters of AME 0.18 (0.13), ALE 0.18 (0.13), PME 0.18 (0.13), PLE 0.18 (0.13); ratio of MOA-L/AW 0.93 (0.95), ratio of MOA-AW/PW 0.89 (0.87). Measurements of legs are given in table 23.

Male. Carapace yellowish brown, longer than wide, without thoracic groove. Chelicerae and endites brown. Eyes equal in diameter, in two parallel transverse rows
occupying the greater width of head. Posterior eye row straight, anterior eye row slightly recurved. Length of MOA slightly longer than anterior width; posterior width longer than anterior width. Chelicerae with 3 promarginal and retromargin teeth, second tooth lardest among promarginal teeth (Figure 29E). Labium brown, longer than wide. Male palp brown, cymbial spur short, tibial apophysis small and short, embolus long threadlike (Figure 29A). Abdomen yellowish brown, with a longer than wide, grayish cardiac pattern dorsally. Leg formula 1-4-2-3.

Female. Similar to males in general aspects and color pattern. Epigynum with a depression in middle, both copulatory openings on sides (Figure 29C); spermatheca divided into two containers, each copulatory duct coiled the larger one (Figure 29D).

**Distribution.** Australia, Samoa, New Hebrides, Solomon, China and Taiwan (new record).

**Remarks.**

*Cheiracanthium mordax* was recorded from Taiwan for the first time. Although we did not examined the type specimen, the original description and figures of *Cheiracanthium submordax* by Zhang, Zhu et Hu (1993) from mainland China agree with those of *C. mordax*. Thus, I consider *Cheiracanthium submordax* a junior synonymy of *C. mordax*.

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**Cheiracanthium taiwanicum** sp. nov. 台灣紅螯蛛
(Figure 30, 41)

**Type series.** Holotype: male (NTNUB-Ar 4758), Peishihkeng, TSAOTUN, NANTOU Co. alt. 150m, 22-VI-2003, Shyh-Hwang CHEN leg. Paratype: 1 female (NTNUB-Ar 4759), Tienweikeng, TSAOTUN, NANTOU Co., alt. 300m, 28-VI-2000, Shyh-Hwang CHEN leg.

**Other specimens examined.**

**KEELUNG Co.:** Nuannuan, Hsishih Dam, alt. 75m, 1 female (NTNUB-Ar 13683), 11-VII-1995, Shyh-Hwang CHEN leg. **TAIPEI CITY:** WENSHAN, Mucha, Maokong, alt. 200m, 1 female (NTNUB-Ar 14052), 1-VIII-2002, Shyh-Hwang CHEN leg. **TAIPEI Co.:** KUNGLIAO, Yuanwangkeng, alt. 200m, 1 male (NTNUB-Ar 13166), 29-III-1996, Shyh-Hwang CHEN leg.; SHIHTING, Shihting, alt. 250m, 1 female (NTNUB-Ar 6387), 25-VIII-1994, Wen-Juen HUANG leg. **HSINCHU Co.:** KUANHSI: Shenkengtze, alt. 200m, 1 male (NTNUB-Ar 10648), 3-III-2002,

**Diagnosis.** *Cheiracanthium taiwanicum* can be distinguished from most other congers by the dark longitudinal marks on carapace and the wide-spread white markings on abdomen (Figure 30A).

**Description.**

Measurements (in mm) (based on the holotype male and the paratype female ( in parentheses)): Body length 4.16 (4.72); carapace length 1.78 (1.94), width 1.41 (1.34), length/width 1.27 (1.44); abdomen length 2.38 (2.78), width 1.13 (1.94); diameters of AME 0.11 (0.10), ALE 0.12 (0.10), PME 0.12 (0.10), PLE 0.12 (0.12); MOA-L/AW 0.92 (0.92), MOA-AW/PW 0.93 (0.90); length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 15.25 = 3.70 + 4.90 + 4.65 + 2.00 (12.65 = 3.10 + 4.20 + 3.70 + 1.65), II 8.40 = 2.20 + 2.70 + 2.60 + 0.90 (6.20 = 1.70 + 2.20 + 1.65 + 0.65), III 6.10 = 1.70 + 1.90 + 1.95 + 0.55 (4.40 = 1.00 + 1.55 + 1.30 + 0.55), IV 9.70 = 2.60 + 3.00 + 3.15 + 0.95 (7.65 = 2.05 + 2.45 + 2.40 + 0.75).

Male (holotype). Carapace pale yellow with dark longitudinal mark on submargins, longer than wide, without thoractic groove (Figure 30A). Eyes equal in diameter, in two rows occupying the greater width of head. Posterior eye row straight, anterior eye row slightly procurred. Anterior width of MOA longer than its length; posterior width longer than anterior width. Chelicerae with 4 promargin and 3 retromargin teeth (Figure 30F). Labium long as wide. Palpal tibial apophysis short, median apophysis of bulb membranous (Figure 30B). Abdomen pale yellow, longer than wide, with white markings on dorsum (Figure 30A). Leg formula: 1-4-2-3.

Female (NTNUB-Ar 4759). Similar to males in general aspects and color pattern. Chelicerae with 5 promarginal and 2 retromarginal teeth (Figure 30G). Copulatory duct spiral-coiled upward, and then downward leading to globular spermatheca (Figure 30E).
Part of dark copulatory duct and spermatheca seen through tegument (Figure 30D).

**Variations.** Measurement (in mm) including types given for 11 males are followed by those of 11 females (in parentheses). Body length 3.70-4.95 (4.05-5.70); carapace length 1.60-2.55 (1.70-2.15), width 1.25-1.95 (1.20-2.55), ratio of length/width 1.21-1.37 (1.17-1.46); abdomen length 2.05-3.05 (2.05-3.40), width 0.95-1.70 (1.55-2.45); diameters of AME 0.10-0.13 (0.10-0.13), ALE 0.10-0.14 (0.10-0.14), PME 0.10-0.12 (0.10-0.13), PLE 0.09-0.13 (0.10-0.13); ratio of MOA-L/AW 0.90-1.04 (0.87-1.07), ratio of MOA-AW/PW 0.86-0.93 (0.84-0.93). Measurements of leg segments are shown as table 24.

**Distribution.** Endemic to Taiwan.

**Etymology.** The specific name is derived from the Taiwan Island, where the new species was discovered.

**Remarks.**

*Cheiracanthium taiwanicum* was endemic to Taiwan and widely spreaded on the island. Specimens of the species was collected at elevations between 50 m and 1200 m in Taiwan.

*Cheiracanthium torsivum* sp. nov. 旋距紅螯蛛

(Figure 31, 41)

**Type series.** Holotype: male (NTNUB-Ar 22798), Kungliao, KUNGLIAO, TAIPEI Co. alt. 300m, 30-V-2004, Wen-Juen HUANG leg. Paratypes: 1 female (NTNUB-Ar 22799), data same as in holotype; 1 female (NTNUB-Ar 24095), same locality as in holotype, 14-VII-2004, Wen-Juen HUANG leg.

**Other specimens examined.**

**TAIPEI Co.:** PINGLIN, Shihpai, alt. 550m, 1 female (NTNUB-Ar 24085), 19-VI-2004, and 1 female (NTNUB-Ar 24988), 3-VIII-2004, Shyh-Hwang CHEN leg.; PINGLIN, Yingtzuling, alt. 600m, 1 male and 3 females (NTNUB-Ar 24081-24084), 19-VI-2004, Shyh-Hwang CHEN leg.; PINGLIN, Szutumiaopu, alt. 500m, 1 male and 1 female (NTNUB-Ar 24065-24066), 24-V-2004, and 2 males and 3 females (NTNUB-Ar 24067-24071), 19-VI-2004, Shyh-Hwang CHEN leg. **TAITUNG Co.:** HAITUAN, 3Km SW Wulu, alt. 1800m, 3 males and 1 female (NTNUB-Ar 24057-24060),
Diagnosis. *Cheiracanthium torsivum* resembles *C. filiapophysis* sp. nov. and can be distinguished from the latter by the distally intorted cymbial spur on male palp (Figure 31A) and having dark globular markings seen through the tegument in female epigynum (Figure 31C).

Description.

Measurements (in mm) (based on the holotype (NTNUB-Ar 22798) and a paratype female (NTNUB-Ar 24095)) (in parentheses): Body length 7.70 (7.10); carapace length 3.20 (2.90), width 2.30 (2.30), ratio of length/width 1.39 (1.26); abdomen length 4.50 (4.20), width 2.00 (2.40); diameters of AME 0.19 (0.19), ALE 0.19 (0.18), PME 0.19 (0.19), PLE 0.19 (0.18); ratio of MOA-L/AW 1.03 (1.00), ratio of MOA-AW/PW 0.84 (0.84); length of legs (total length = femur + (patella + tibia) + metatarsus + tarsus): I 21.80 = 5.30 + 7.40 + 6.80 + 2.30 (13.50 = 3.50 + 4.60 + 3.90 + 1.50), II 14.10 = 3.60 + 4.90 + 4.30 + 1.30 (8.50 = 2.30 + 2.90 + 2.40 + 0.90), III 9.85 = 2.75 + 3.10 + 3.00 + 1.00 (6.45 = 1.80 + 2.20 + 1.70 + 0.75), IV 16.20 = 4.30 + 5.30 + 5.20 + 1.40 (10.05 = 2.70 + 3.50 + 2.95 + 0.90).

Male (holotype). Carapace yellowish brown, longer than wide, without thoracic groove. Eyes equal in diameter, in two parallel transverse rows occupying the greater width of head. Posterior eye row straight, anterior eye row slightly procurved. Anterior width of MOA as long as length; posterior width than anterior width. Chelicerae with 3 teeth on each promargin and retromargin of fang groove (Figure 31E). Palpal bulb developed, with a spiniform median apophysis (Figure 31A). Abdomen yellow, longer than wide, with a pale-grayish cardiac pattern dorsally. Leg formula: 1-4-2-3.

Female (NTNUB-Ar 24095). Similar to males in general aspects and color pattern. Chelicerae with 2 promargin and 3 retromargin teeth (Figure 31F). Spermatheca globular form (Figure 31D). Part of dark copulatory duct and spermatheca seen through tegument (Figure 31C).

Variations. Measurement (in mm) including types given for 5 males are followed by those of 6 females (in parentheses). Body length 5.70-7.70 (6.10-8.60); carapace length 2.40-3.60 (2.60-3.00), width 1.70-2.80 (1.95-2.30), ratio of length/width 1.29-1.43 (1.26-1.35); abdomen length 3.30-4.50 (3.40-5.60), width 1.55-2.10 (1.20-3.60); diameters of AME 0.14-0.19 (0.15-0.19), ALE 0.14-0.19 (0.16-0.19), PME 0.14-0.19 (0.16-0.19), PLE 0.12-0.19 (0.15-0.18); ratio of MOA-L/AW 0.94-1.09 (0.97-1.06), ratio of MOA-AW/PW 0.82-0.88 (0.76-0.84). Measurements of leg segments are shown as table 25.
**Distribution.** Endemic to Taiwan.

**Etymology.** The specific name is derived from the distally intorted cymbial spur on male palp. The word “*torsivum*” means “spiral-twisted”.

**Remarks.**

*Cheiracanthium torsivum* was endemic to Taiwan. It was found at elevations between 500 m and 1800 m in Taiwan.