

## A Taxonomic Study of the Miturgid Genus *Cheiracanthium* C.L. Koch, 1839 (Arachnida: Araneae: Miturgidae) from Korea

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**Abstract** - A Korean *Cheiracanthium erraticum* (Walckenaer, 1802) is first described with detailed illustrations, leg spination, trichobothrium patterns and SEM photographs of male palp and female epigynum. Two species, *C. lascivum* Karsch, 1879 and *C. eutiittha* Boesenberg & Strand, 1906 are excluded from Korean fauna. A map showing distribution of species and a key to the species of genus *Cheiracanthium* from Korea are provided.

**Key words** : Taxonomy, Palearctic spiders, *Cheiracanthium*, Korea

### INTRODUCTION

The Palearctic spiders of the genus *Cheiracanthium* comprise at least 197 species in the area stretching from Europe to East Asia (Chen *et al.* 2006; Platnick 2007). Of these, 64 species are distributed from a variety of Asian countries (Korea, 8 species; China, 30; Russia, 13; Japan, 8; Taiwan, 5) (Paik 1985, 1990; Song *et al.* 1999; Tanikawa 2007). These taxa are characterized by the male palpal organs having long cymbial spur, the rectangular ocular area, long first leg and lacking fovea. Ramírez *et al.* (1997) transferred Eutichurinae belonging to genus *Cheiracanthium* from Clubionidae to the family Miturgidae based on these characters. Deeleman-Reinhold (2001) also suggested three subfamilies of Clubionidae, Clubioninae, Eutichurinae and Systariinae for forest spiders of Southeast Asia. Although subfamily Eutichurinae is needed to review the relationship of related groups, we incline to support genus *Cheiracanthium* of family Miturgidae.

More than 113 species previously in the genus *Cheiracanthium* were described only from male or female speci-

mens. In Korea, eight species of only one genus the *Cheiracanthium* in the family Miturgidae are reported: *C. japonicum* Boesenberg & Strand, 1906; *C. unicum* Boesenberg & Strand 1906; *C. brevispinum* Song *et al.* 1982; *C. zhejiangense* Song & Hu, 1984; *C. uncinatum* Paik 1985; *C. taegense* Paik 1990; *C. lascivum* Karsch 1879; *C. eutiittha* Boesenberg & Strand 1906). The latter two species are excluded from Korean fauna based on the misidentification (*C. lascivum*), insufficient data (*C. eutiittha*) and Korean Arachnologists' suggestion (Paik 1990). Although Namkung (2001, 2003) presented simple illustrations of *C. eutiittha* with photo of Japanese species, this species cannot be reliably identified from his pictorial book. In the present study, we report *C. erraticum* (Walckenaer, 1802) to be new to the Korean fauna.

During a survey of the spider fauna of Korea, spiders of the genus *Cheiracanthium* were collected from pitfall traps and net sweeping in natural forests. The main goal of this paper is to provide research data for the future revision of the Korean endemic spider genus *Cheiracanthium*.

### MATERIALS AND METHODS

Most collection areas of Korean miturgid spiders were

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located beside small streams, with vegetation characterized by a mixture of tree layer (*Quercus* spp. etc) and herb layer (*Athyrium niponicum* (Mett.) etc. (Fig. 5). At some station, twenty pitfall traps (plastic cups, height 6.3 cm, diameter 8 cm) were set 10 m apart in two rows and filled with ethylene glycol (Greenslade and Greenslade 1971). A new recorded species, *C. erraticum* (Walckenaer, 1802) collected in 1,000 m above sea level (a.s.l.), the Mt. Odaesan National park. Specimens were preserved with 70% ethanol. Measurements are in millimeters unless noted otherwise. Specimens examined in this paper will be deposited in the Natural Institute of Biological Resources (NIBR, Incheon), Korea and the Department of Life Science, College of Natural Sciences, Hanyang University, Seoul.

The descriptive terminology and spination of legs followed that Kim and Lee (2006, 2007). Abbreviations used are as follows: a, apical; AER, anterior eye row; ALE, anterior lateral eye; AME, anterior median eye; CB, Chungcheongbuk-do; CF, cymbial furrow; CFR, cymbial furrow rate, longest cymbial furrow/cymbium length  $\times$  100; CO, conductor; CD, copulatory duct; CS, cymbial spur; d, dorsal view; EF, epigynal furrow; EM, embolus; eye ratio, longest eye row/carapace width  $\times$  100; ET, embolus tip; GB, Gyeongsanbuk-do; GG, Gyeonggi-do; GN, Gyeongsangnam-do; GO, genital opening; GW, Gangwon-do; JG, Jeollabuk-do; JN, Jeollanam-do; JJ, Jeju-do; p, prolateral view; PER, posterior eye row; PLE, posterior lateral eye; PME, posterior median eye; r, retrolateral view; RTA, retrolateral tibial apophysis; SS, spermathecal stalk.

## SYSTEMATIC ACCOUNTS

Order Araneae Clerck, 1757

Family Miturgidae Simon, 1885

Genus *Cheiracanthium* C.L. Koch, 1839

A key to the species of genus *Cheiracanthium* from Korea

1. Male ..... 2
  - Female ..... 8
2. Palp with dorsal tibial apophysis ..... 3
  - Palp without dorsal tibial apophysis ..... 4
3. Cymbial furrow longer than 2/3 cymbium length .....
  - ..... *C. taegense*
  - Cymbial furrow shorter than 2/3 cymbium length .....

- ..... *C. unicum*
- 4. Cymbial spur longer than tibia length of palp .....
  - ..... *C. zhejiangense*
  - Cymbial spur longer than tibia length of palp ..... 5
- 5. Chelicera with three promarginal teeth ..... 6
  - Chelicera with four promarginal teeth ..... *C. erraticum*
- 6. Chelicera with two retromarginal teeth ..... 7
  - Chelicera with three retromarginal teeth .....
  - ..... *C. uncinatum*
- 7. Median apophysis as long as tegulum width .....
  - ..... *C. japonicum*
  - Median apophysis shorter than tegulum width .....
  - ..... *C. brevispinum*
- 8. Epigynal atrium circle ..... 9
  - Epigynal atrium oval ..... 10
- 9. Copulatory duct twisted more than two rotations .....
  - ..... *C. erraticum*
  - Copulatory duct twisted less than two rotations .....
  - ..... *C. unicum*
- 10. Copulatory pore located on the middle part of epigynal atrium ..... 11
  - Copulatory pore not located on the middle part of epigynal atrium ..... 12
- 11. Copulatory duct long, twisted ..... *C. taegense*
  - Copulatory duct small, simple straight ..... *C. unicum*
- 12. Copulatory pore located on the lateral part of epigynal atrium ..... 13
  - Copulatory pore located on the upper part of epigynal atrium ..... *C. zhejiangense*
- 13. Copulatory duct twisted more than three rotations .....
  - ..... *C. japonicum*
  - Copulatory duct twisted less than three rotations .....
  - ..... *C. brevispinum*

### *Cheiracanthium erraticum* (Walckenaer, 1802)

북방어리염낭거미 (신칭) (Figs. 1-4)

*Aranea erratica* Walckenaer, 1802, p. 219 (D).

*Clubiona erratica*: Walckenaer, 1805, p. 43; 1837, p. 602 (D♂); Blackwall, 1861, p. 135, fig. 86 (♂♀).

*Clubiona nutrix* Hahn, 1831, p. 7, fig. 98 (♂♀, misidentified); Blackwall, 1861, p. 134, fig. 85 (♀).

*Clubiona dumetorum* Hahn, 1833, p. 1, pl. 24, fig. B (D♀).

*Cheiracanthium carnifex* C.L. Koch, 1839, p.14, figs. 438-439 (D♂♀); L. Koch, 1866, p. 258, figs. 164-166 (♂♀); O.P.-Cambridge, 1873, p. 529, fig. 3 (♂♀); Han-

sen, 1882, p. 54, fig. 2 (♂ ♀); Bösenberg, 1902, p. 282, fig. 414 (♂ ♀).

*Cheiracanthium erroneum*: O.P.-Cambridge, 1873, p. 532, fig. 5 (D♂); Becker, 1896, p. 286, fig. 26 (♂ ♀).

*Cheiracanthium erraticum*: Menge, 1873, p. 348, pl. 61, fig. 198 (♂ ♀); Becker, 1896, p. 287, fig. 5 (♂ ♀); Chyzer & Kulczyn'ski, 1897, p. 233, fig. 65 (♂ ♀); Reimoser, 1932, p. 62, fig. 8 (♂ ♀), 1937, p. 73, figs. 48-49 (♂ ♀); Simon, 1932, p. 902, 961, figs. 1364-1365 (♂ ♀); Tullgren, 1946, p. 37, figs. 69-71 (♂ ♀); Locket & Millidge, 1951, p. 144, fig. 74A, D (♂ ♀); Clark & Locket, 1964, p. 1, fig. F (♀); Locket, 1964, p. 259, fig. 1D (♀); Braendegaard, 1966, fig. 160-161 (♂ ♀); Yaginuma, 1966, p. 38, fig. E, E' (♂ ♀), 1967, p. 95, fig. 2l-m (♀), 1986, p. 178, fig. 98.5 (♂ ♀); Wiehle, 1967, p. 189, fig. 25 (♀), 1967, p. 200, fig. 20 (♀); Azheganova, 1968, p. 126, figs. 304-305 (♂ ♀); Tyschchenko, 1971, p. 127, fig. 303 (♂); Miller, 1971, p. 104, plate XI, fig. 29, plate XXVII, fig. 26 (♂ ♀); Clark & Jerrard, 1972, p. 110, fig. 2 (♂); Locket, Millidge & Merrett, 1974, p. 15, fig. 7G (♀); Legotai & Sekerskaya, 1982, p. 50, fig. III.12, 17 (♂ ♀); Roberts, 1985, p. 88, fig. 34a (♂ ♀); Sterghiu, 1985, p. 114, fig. 34a-e (♂ ♀); Legotai & Sekerskaya, 1989, p. 223, fig. LXIX.12, 17 (♂ ♀); Chikuni, 1989, p. 123, fig. 5 (♂ ♀); Izmailova, 1989, p. 111, fig. 98 (♀); Wolf, 1991, p. 233, figs. 1A, 6A-B, 8A-C, 9A-B, E-F (♂ ♀); Heimer & Nentwig, 1991, p. 396, fig. 1030 (♂ ♀); Zhang, 1994, p. 133, figs. 4-5 (♀); Almquist, 1994, p. 116, figs. 20-22 (♂ ♀); Roberts, 1995, p. 133, unnumbered figure (♂ ♀), 1998, p. 142, unnumbered figure (♂ ♀); Jäger, 1996, p. 565, fig. 8c-d (♀); Mcheidze, 1997, p. 171, figs. 319-320 (♂ ♀); Song *et al.*, 1999, p. 413, fig. 241I-J (♀); Trotta, 2005, p. 170, fig. 358 (♂).

*Cheiracanthium orientale* Kulczyn'ski, 1885, p. 45, pl. 11, fig. 25 (D♂ ♀).

**Material examined.** 4♂♂, 7♀♀, 11-VI-2005, 1♀, 23-VII-2005, Jilmae swamp, Mt. Odaesan, GW, leg. B.W. Kim.

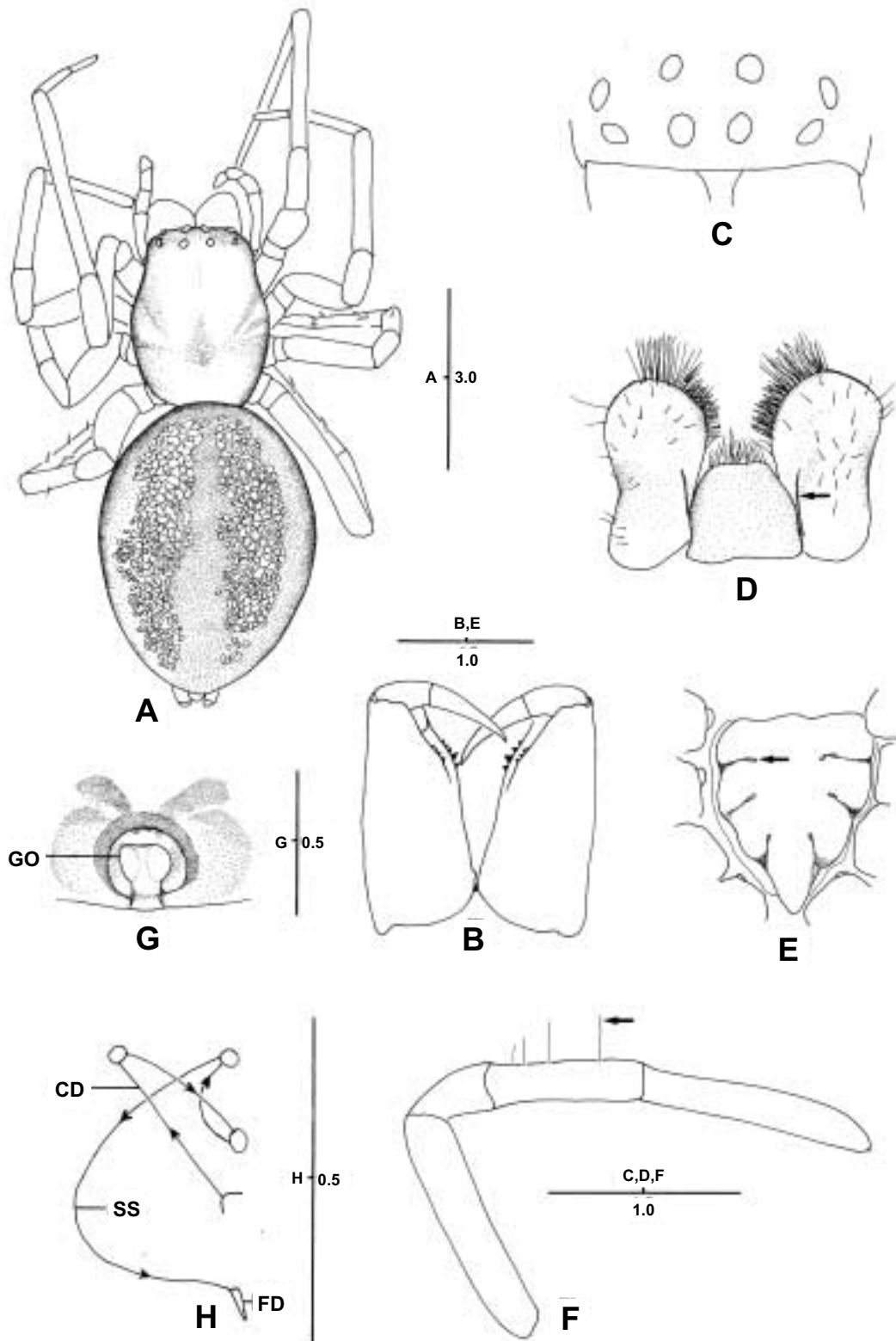
**Dimensions (mm).** Female/Male: habitus length 7.70/5.66; carapace length 3.02/2.73, carapace width 2.29/2.19, carapace height 1.40/1.46; clypeal height 0.12/0.14, cheliceral length 1.73/2.22, cheliceral width 0.78/0.73, cheliceral fang length 1.02/1.56; endite length 0.96/1.09,

endite width 0.58/0.51; labium length 0.47/0.51, labium width 0.60/0.51; sternum length 1.44/1.29, sternum width 1.15/1.34; AER 1.09/1.16, PER 1.26/1.32, AME 0.14/0.15 ALE 0.16/0.16, PME 0.16/0.16, PLE 0.15/0.16. Eye formula ALE=PME>PLE>AME/ALE=PME=PLE>AME. Palp 3.81/4.26 (1.30/1.40, 0.49/0.46, 0.79/0.77, 1.23/1.63). First leg 12.86/15.92 (3.43/3.96, 1.24/1.33, 3.33/4.38, 3.40/4.26, 1.46/1.99), second leg 8.14/9.77 (2.22/2.70, 1.05/1.11, 1.94/2.60, 2.10/2.60, 0.83/0.76), third leg 6.22/7.43 (1.71/2.06, 0.92/0.89, 1.27/1.62, 1.62/2.10, 0.70/0.76), fourth leg 9.50/10.83 (2.67/3.02, 1.08/1.11, 2.16/2.57, 2.76/3.11, 0.83/1.02). Leg formula I IV II III/IV II III. Abdomen length 5.08/3.05, abdomen width 3.59/2.19, abdomen height 3.28/2.03.

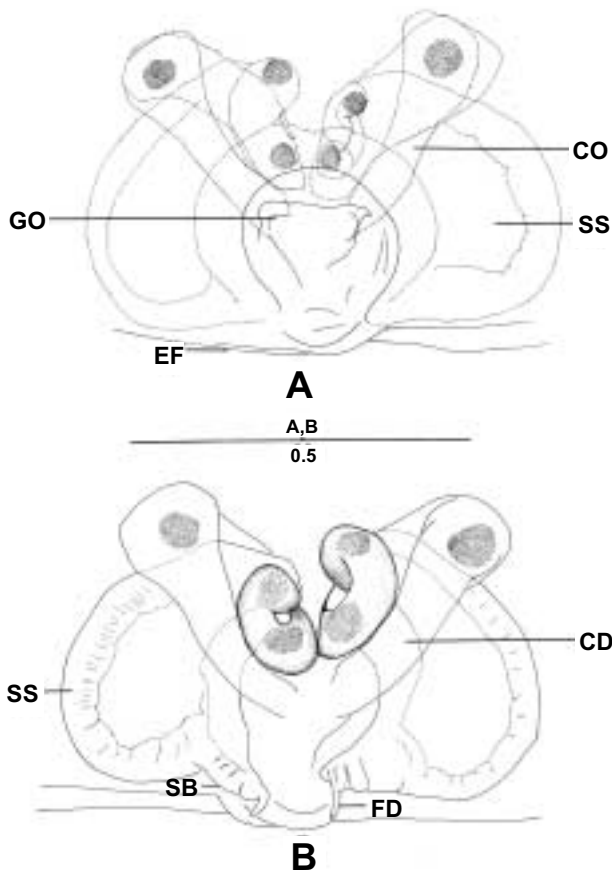
**Description.** *female*: medium-sized spider longer than male. Carapace elongate, 1.3 times as long as wide (CI 76%), moderately narrowed in eye area, without distinct fovea at middle (Fig. 1A). AER straight, PER slightly procurved in frontal view; AME smaller than other eyes, separated by slightly longer than their diameter, eye ratio 55 (Fig. 1C). Clypeal height slightly less than AME diameter, without chila (Fig. 1C). Chelicerae with numerous long setae, with four (five, right) promarginal teeth at left chelicera, second one largest to the base; four retromarginal teeth subequal in size (Figs. 1B, 4F-G). Endites reddish brown with a clearly longitudinal groove at inner parts (Fig. 1D); labium rectangular, slightly wider than length (Fig. 1D). Sternum shield-shaped with several grooves, widest at first coxae, not produced between fourth coxae (Figs. 1E, 4K).

Palp (Fig. 1F) with only spine at distal part; tibia with four trichobothria in one row, no spine. Legs (Fig. 1A) yellowish brown; length of leg I (patella+tibia) always longer than carapace length; tibia with five to eleven trichobothria in four rows (2p-3d-2d-1r on I, 1p-2d-0d-2r on II, 1p-4d-3d-1r on III, 1p-4d-4d-2r on IV), metatarsi two to five in one row (five on I, II, four on III, two on IV), tarsi five to seven in three row (seven on I, six on II, IV, five on III); tarsal organ situated close to distal end of tarsus, slightly anterior of distal trichobothrium; tarsi with two upper claws with five to nine side teeth (seven on I, II, nine (five with joined base) on III, five on IV).

Leg spination: leg I femur with one spine (0-0-1 on prolateral), tibia with one (0-1-0 on ventral), metatarsus three (2-0-1a on ventral), tarsus without spine; leg II femur



**Fig. 1.** *Cheiracanthium erraticum* (Walckenaer, 1802) from Korea, female. A. Habitus, dorsal view. B. Chelicerae, left part, posterior view. C. Eye area and clypeus, frontal view. D. Endite with long longitudinal groove (arrow) on inner part and labium, ventral view. E. Sternum with three pairs of grooves (arrow), ventral view. F. Palp with four trichobothria (arrow) on the dorsal part of tibia, left part, prolateral view. G. Epigynum, ventral view. H. Genital opening (GO), copulatory duct (CD), spermathecal stalk (SS) & fertilization duct (FD), right part, ventral view.



**Fig. 2.** *Cheiracanthium erraticum* (Walckenaer, 1802) from Korea, female. A. Epigynum, ventral view. B. Genitalia, dorsal view. Note: CD, copulatory duct; EF, epigastric furrow; FD, fertilization duct; GO, genital opening; SB, spermathecal base; SS, spermathecal stalk.

and tarsus without spine, tibia two (1-0-0-1 on ventral); leg III femur and tarsus without spine, tibia two (0-1-0 on prolateral and retrolateral), metatarsus nine with one small spine one fourth as long as others on inner prolateral (three, 0-1-2 on prolateral and retrolateral; three, 2-0-1a on ventral); leg IV femur and tarsus without spine, tibia three (one, 0-0-1 on prolateral; two, 0-1-1 on retrolateral), metatarsus 11 with one small spine one tenth as long as others on middle prolateral (five, 1-2-2 on prolateral; four, 1-1-2 on retrolateral; two, 1-0-1 on ventral).

Abdomen ovoid, with scattered reddish white spots and without distinct chevrons on dorsal side (Fig. 1A). Cribellum absent.

Female epigynum (Figs. 1G-H, 3A-B, 4L): epigynal teeth and atrial hood absent; atrium, slightly circle as long as width; atrial septum indistinct; copulatory pore deep, situated at lateral upper margin of atrium; copulatory ducts

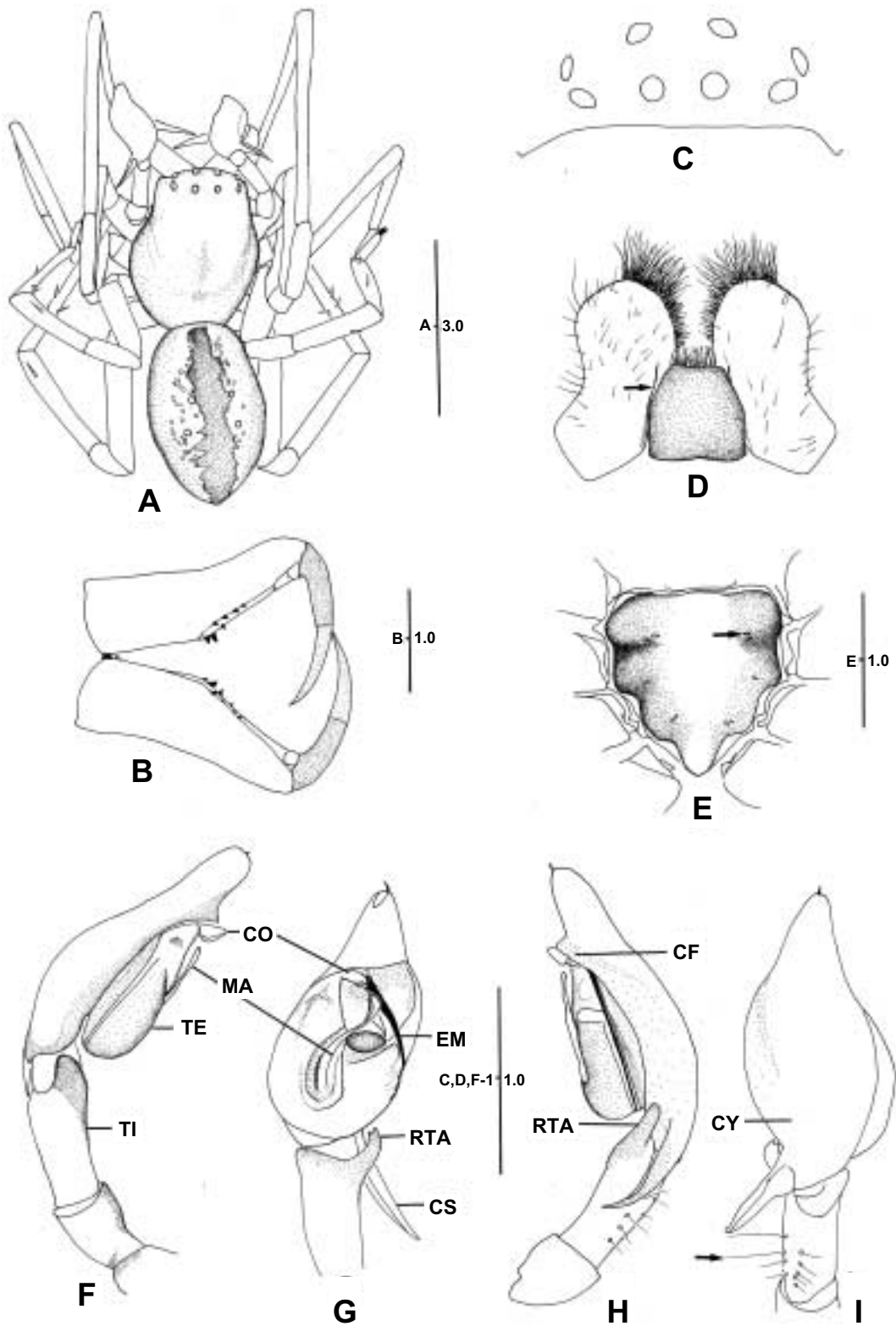
oblique linear with transparent membranes, twice and half rotations, twice ascending and descending; spermathecal heads indistinctive; spermathecae large, curved inner, with distinctive stalks and bases; fertilization ducts small cylinder, arising from posterior spermathecae.

*Male*: medium-sized spider shorter than female. Carapace elongate, 1.2 times as long as wide (CI 80%), moderately narrowed in eye area, without distinct fovea at middle (Fig. 3A). AER straight, PER slightly procurved in frontal view; AME smaller than other eyes, separated by slightly longer than their diameter, eye ratio 60 (Fig. 3C). Clypeal height slightly less than AME diameter, without chila (Fig. 3C). Chelicerae with numerous long setae, with four (three, right) promarginal teeth at left chelicera, second one largest to the base; four retromarginal teeth subequal in size (Fig. 3B). Endites reddish brown with a clearly longitudinal groove at inner parts; labium rectangular, slightly as long as wide (Fig. 3D). Sternum shield-shaped with several grooves, widest at first coxae, not produced between fourth coxae (Fig. 3E).

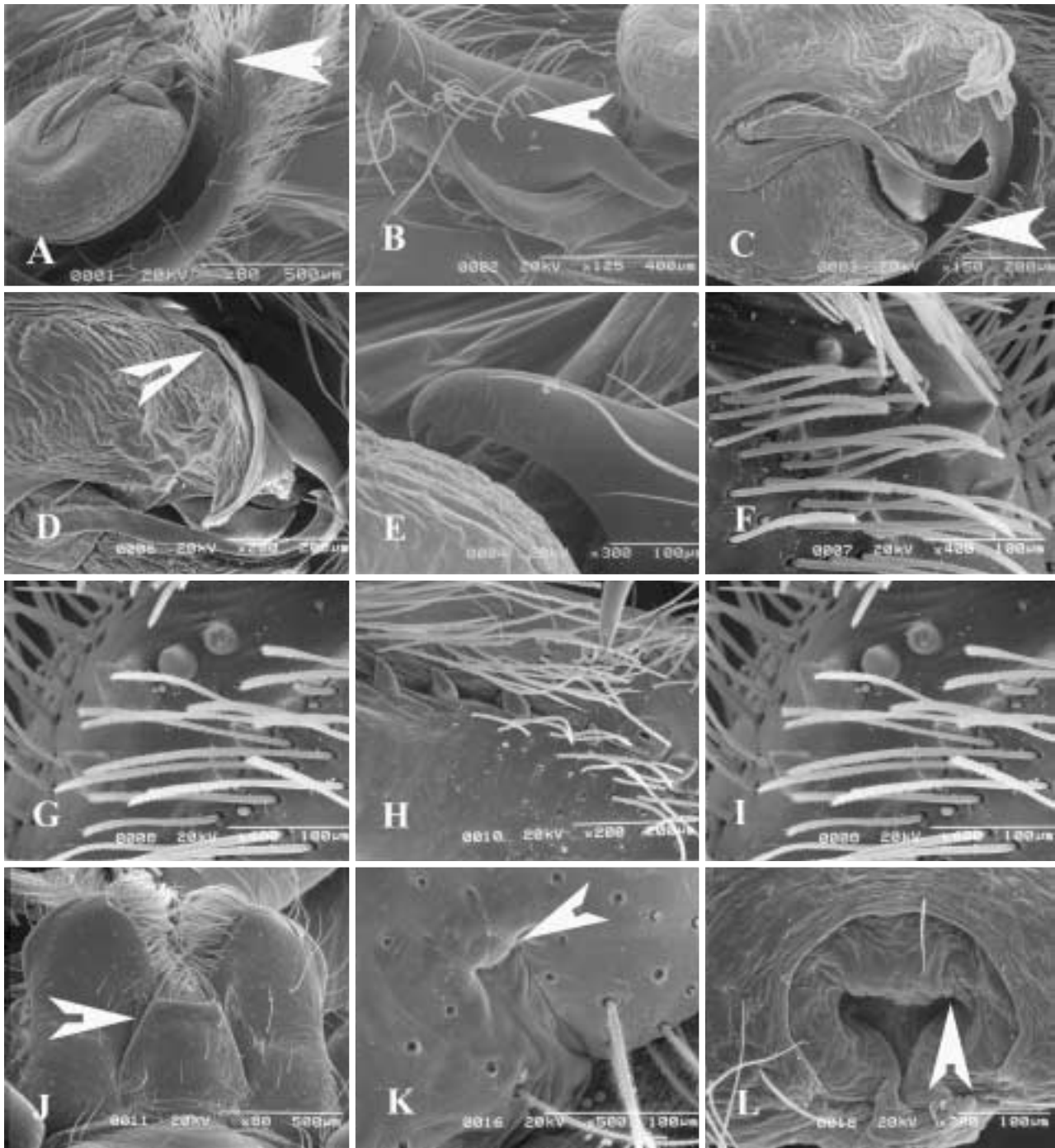
Palp (Figs. 3F-I, 4A-E) with only spine at distal part; tibia with nine trichobothria in two rows, no spine. Legs (Fig. 3A) yellowish brown; length of leg I (patella+tibia) always longer than carapace length; tibia with five or eight trichobothria in four rows (0p-2d-1d-2r on I, 2p-2d-2d-2r on II, III, 1p-3d-1d-3r on IV), metatarsi five or eight in one row (eight on I, IV, five on II, III), tarsi five to eight in three row (eight on I, six on II, IV, five on III); tarsal organ situated close to distal end of tarsus, slightly anterior of distal trichobothrium; tarsi with two upper claws with nine to sixteen side teeth (nine on I, II, eight (two with mostly joined base) on III, 16 (six with mostly joined base) on IV).

Leg spination: leg I femur with one spine (0-0-1 on prolateral), tibia with one (0-1-0 on ventral), metatarsus three (2-0-1a on ventral), tarsus without spine; leg II femur, tibia, tarsus without spine, and metatarsus two (one, 1-0-0 on prolateral; one, 0-0-1 on ventral); leg III femur with one spine (0-0-1 on dorsal), tibia two (0-1 on prolateral and retrolateral), metatarsus nine (three, 1-2 on prolateral; three, 0-1-2 on retrolateral; three, 2-0-1 on ventral), tarsus without spine; leg IV femur and tarsus without spine, tibia one (0-0-1 on retrolateral), metatarsus 10 (six, 1-2 on prolateral and ventral; four, 2-1-1 on retrolateral).

Abdomen ovoid, with scattered reddish white spots and without distinct chevrons on dorsal side (Fig. 3A). Cribel-



**Fig. 3.** *Cheiracanthium erraticum* (Walckenaer, 1802) from Korea, male. A. Habitus, dorsal view. B. Chelicerae, left part, posterior view. C. Eye area and clypeus, frontal view. D. Endite with long longitudinal groove (arrow) on inner part and labium, ventral view. E. Sternum with three pairs of grooves (arrow), ventral view. F.-I. Palp with trichobothria (arrow), left part, prolateral view (F), ventral (G), retrolateral (H) and dorsal (I). Note: CF, cymbial furrow; CO, conductor; CS, cymbial spur; CY, cybium; EM, embolus; MA, median apophysis; RTA, retrolateral tibial apophysis; TE, tegulum; TI, tibia.

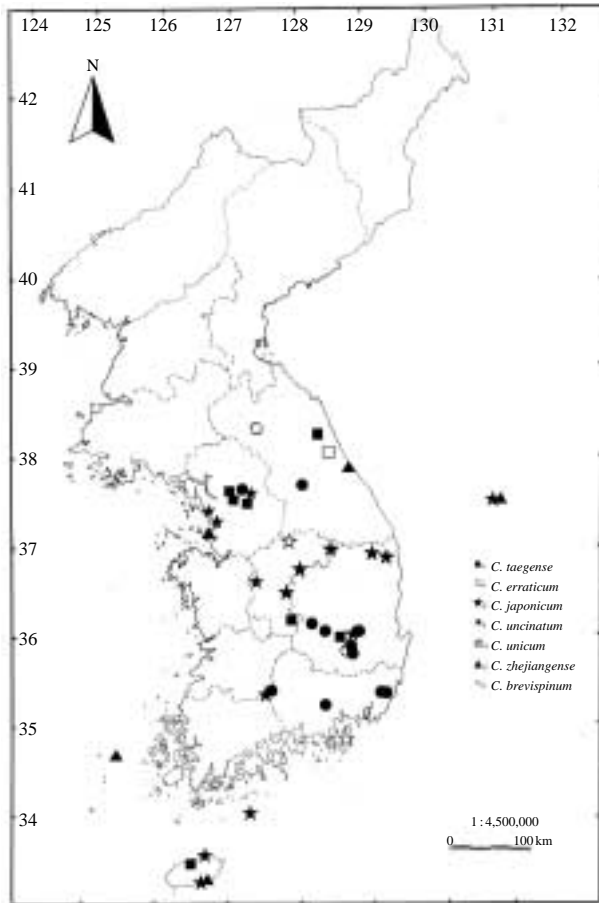


**Fig. 4.** SEM photographs of *Cheiracanthium erraticum* (Walckenaer, 1802) from Korea. A-E. Male palp, left part. A, retrolateral view; B, retrolateral tibial apophysis and cymbial spur, trichobotria at the prolateral part of tibia; C, median apophysis, embolus (arrow), conductor, ventral view; D, conductor and embolus (arrow); E, retrolateral tibial apophysis modified with two divided distal part (arrow), ventral view. F-I, Chelicera, posterior view. F, female, right part; G, female left part; H, male, right part; I, male, left part. J. Endites with a longitudinal groove on the inner part and labium. K. Male, sternum with grooves (arrow) on the margin. L. Epigynum, genital opening (arrow), ventral view.

lum absent.

Palp (Figs. 3F-I, 4A-E): patellar apophysis absent; RTA modified with two divided distal part (Figs. 3G, 4E); cym-

bium expended long spur and 1.3 times as long as cymbial furrow (CFR 76%) (Figs. 3H, 4A); median apophysis slender with hooked distal part, arising longitudinally from the



**Fig. 5.** Map showing the distribution of Korean *Cheiracanthium*. Note: ■, *C. taegense*; □, *C. erraticum*; ★, *C. japonicum*; ●, *C. uncinatum*; ☆, *C. unicum*; ▲, *C. zhejiangense*; ○, *C. brevispinum*.

middle of tegulum (Figs. 3G, 4C); conductor with two branched distal parts, situated on upper of palpal organ (Figs. 3F-G, 4C-D); embolus long slender with distal part wrapped in conductor, wound clockwise direction (Figs. 3H, 4C-D).

**Distribution.** Korea (Mt. Odaesan), Japan, China, Russia, Europe.

**Remarks.** The species can be distinguished from Korean *Cheiracanthium* spiders by the males with four promarginal teeth and four (three) retromarginal teeth at chelicerae (Figs. 3B, 4F-G); dorsal tibial apophysis absent (Fig. 3D); long cymbial furrow length and cymbial spur (Figs. 3G-H, 4B); and in females by epigynum with circle atrium (Figs. 1G, 4L), copulatory duct twisted more than two rotations (Fig. 1H), fertilization duct originating from posterior sper-

matheca (Fig. 2B).

### Check list of the species of Korean *Cheiracanthium*

#### 1. *Cheiracanthium brevispinum* Song, Feng & Shang, 1982

Previous records in Korea: Paik, 1990 (1♂, 5-VI-1962, Kimhwa, Cheolwon-gun, GW, leg. Y.K. Kim; 1♂, Gachang, Dalseong-gun, GB, leg. D.E. Cheong).

**Distribution.** Korea, China.

#### 2. *Cheiracanthium erraticum* (Walckenaer, 1802)

**Distribution.** Korea, China, Japan, Palearctic.

#### 3. *Cheiracanthium japonicum* Boesenberg & Strand, 1906

Previous records in Korea: Paik, 1953 (3♀♀, 25-VIII-1937, Juju-si, 5♀♀, 28-VII-1937, Kimyeong, 1♀, 30-VII-1937, Seoguipo, 5♂♂, 14♀♀, Seongsanpo, JJ)-Namkung and Yoon, 1976 (1♀, 9-VIII-1975, Mt. Chiaksan, GW)-Paik, 1990 (1♂, 3♀♀, 5-VIII-1955, Todong, Isl. Ulleung, GB, leg. I.H. Shon; 11♀♀, 10-VIII-1960, leg. Y.K. Jeong; 1♂, 11-VIII-1963, leg. M.J. Hong; 1♂, 1♀, 8-VIII-1966, 37♀♀, 21-VIII-1964, leg. Y.K. Kim; 1♂, 5♀♀, 10-VIII-1967, 23♀♀, 18-VIII-1969, leg. S.H. Lee; 8♂♂, 1y♂, 4♀♀, 1y♀, 25-VIII-1967, 23♀♀, 18-VIII-1969, leg. S.H. Lee; 4♀♀, 1y♀, 8♂♂, 1y♂, 25-VII-1968, leg. H.J. Yang; 1♀, 22-VIII-1960, Jeu-dong, leg. M.J. Hong; 6♂♂, 13♀♀, 28-VIII-1966, Wada-ri, leg. Y.K. Kim; 2♀♀, 28-VII-1960, Namyang, leg. S.S. Eum; 1♀, 17-VIII-1984, Tonggumi, leg. K.Y. Kim; 4♀♀, 20-VIII-1967, Mt. Seongin, leg. Y.K. Kim; 44♀♀, 22-VIII-1967, Mt. Albong, leg. Y.K. Kim; 2♀♀, 28-VII-1976, Seo-myeon, 1♂, 30-VII-1976, 2♀♀, 3-VIII-1980, Taehari, 2♀♀, 1-VIII-1980, Mt. Seongin, leg. J. Namkung; 1♀, 15-VIII-1956, Eundeuk, GB, leg. T.S. Park; 2♂♂, 13-VIII-1956, Mt. Palgong, GB, leg. Y. Paik; 1♂, 28-VIII-1983, leg. S.T. Kim; 1♂, 3-X-1960, Chungjoo, CB, leg. J. Namkung; 1♀, 23-VII-1961, Mt. Songri, leg. K.Y. Paik, 1♀, 24-VII-1961, leg. D.H. Choi; 1♀, 28-VI-1962, Mt. Sopaik, Choam-sa, CB, leg. J. Namkung; 1♀, 20-IX-1963, Socheon-myeon, GB, leg. Y.K. Jeong, 3♂♂, 1♀, 10-VII-1964, leg. K.Y. Paik; 1♂, 26-VII-1963, Hwaem-sa, Mt.

Jiri, JB, leg. K.Y. Paik; 2 ♀ ♀, 18-VIII-1964, Joreung, CB, leg. K.Y. Paik; 11 ♂ ♂, 1y ♂, 12 ♀ ♀, 30-VI-1964, Hamdeuk, JJ, leg. E.S. Kim, 1 ♀, 30-VI-1964, Samyang, leg. K.Y. Paik, 2 ♀ ♀, 25-VI-1980, Samtebong, leg. E.S. Kim, 1 ♀, 1-VIII-1955, Hanlim, leg. S.Y. Park, 1 ♀, 9-VIII-1961, Pyoseun, leg. S.J. Kang, 1 ♀, 24-VII-1960, Mt. Halla, leg. Y.K. Kim, 1 ♀, 25-VIII-1960, leg. S.M. Lee, 1 ♀, 24-VII-1960, leg. K.Y. Paik; 1 ♀, 20-VIII-1975, Mt. Tonggo, Uljin-gun, GB, leg. K.Y. Paik; 1 ♀, 5-VII-1976, Incheon city, GG, leg. J. Namkung; 2 ♂ ♂, 24-VIII-1978, Taegu-city, GB, leg. K.J. Kim, 8 ♂ ♂, 1 ♀, 15-VIII-1966, leg. K.Y. Paik, 2 ♀ ♀, 31-VII-1987, leg. S.H. Jeong; 5 ♀ ♀, 1y ♀, 29-VII-1980, Isl. Geomun, GN, leg. T.H. Jo; 1 ♀, 2-VIII-1980, Namyang, Siheung city, GG, leg. J. Namkung; 2 ♀ ♀, 15-VIII-1985, Mt. Ungil, Namyangju city, GG, leg. J.P. Kim).

**Distribution.** Korea, China, Japan.

#### 4. *Cheiracanthium taegense* Paik, 1990

Previous records in Korea: Paik, 1990 (1 ♀, 10-VI-1962, leg. K.Y. Paik, 1 ♀, 3-VI-1973, Mt. Hwangak, GB, leg. H.J. Lee; 1 ♀, 15-VIII, 1963, Cheongyang-ri, Seoul, leg. S.W. Kim; 2 ♀ ♀, 13-VIII-1964, Mt. Seolak, leg. K.Y. Paik; 1 ♂, 1 ♀, 15-VIII-1965, Daegu city, GB, leg. K.Y. Paik; 2 ♂ ♂, 15-VI-1969, 4 ♂ ♂, 1 ♀, 29-VI-1969, 1 ♂, 6-VI, 1970, 1 ♀, 2-VIII-1970, 1 ♀, 9-VIII-1970, 1 ♂, 1 ♀, 10-VI-1976, Jinjeop-eup, Namyangju city, by J. Namkung; 1 ♀, Saradong, Jeju city, JJ, by J. Namkung)-1 ♀, 9-VI-2000, Hwagyesa, Seoul, by B.W. Kim; 1 ♂, 10-VI-2000, Mt. Yebong, Namyangju city, GG, by B.W. Kim.

**Distribution.** Korea, China.

#### 5. *Cheiracanthium uncinatum* Paik, 1985

Previous records in Korea: Paik 1990 (1 ♀, 15-VIII-1960, Gimcheon, GB, leg. H.J. Lee; 2 ♀ ♀, 4 ♂ ♂, 10-VI-1962, leg. E.I. Paik, 1 ♀, 26-VII-1963, Hwaeumsa, Mt. Jiri, JN, leg. K.Y. Paik; 2 ♂ ♂, 1 ♀, 18-VI-1965, 1 ♀, 30-VII-1968, leg. K.Y. Paik, 1 ♀, 11-VIII-1977, Dongheasa, Mt. Palgong, leg. Y.M. Shin, 2 ♂ ♂ 4-VIII-1984, Page-sa, Daegu city, GB, leg. E.J. Choi; 1 ♂, 29-VI-1969, 2 ♂ ♂, 28-VI-1970, Gwangreung, leg. J. Namkung 2 ♀ ♀, 1 ♂, 1-VII-1974, Mt. Geumjeong, Busan city, GB, leg. J.H. Kim; 1 ♀, 18-VI-1977, Gachang, Dalseong-gun, GB, leg. B.K. Seo; 1 ♂, 24-

VII-1979, leg. Y.H. Kim and M.H. An; 1 ♂, 10-VI-1983, leg. S.S. Yang, 3 ♂ ♂, 28-VII-1983, Mt. Geumo, Gumi city, GB, leg. J.M. Park; 2 ♀ ♀, 25-VII-1983, leg. S.D. Kim; 2 ♀ ♀, 1 ♂, 27-VI-1984, 1 ♀, 2-VII-1984, Euhae-sa, Yeongcheon-gun GB, leg. K.T. Shin, D.C. Shon and H.K. Kang; 1 ♂, 15-VII-1981, Hwabang-sa, Namhae-gun, GN, leg. B.K. Seo; 1 ♂, 27-VI-1995, Dong-myeon, Hongcheon-gun, GW, leg. J. Namkung) - 2 ♀ ♀, 19-VI-2000, Mt. Yebong, Namyangju city, GG, leg. B.W. Kim - 1 ♂, 26-VI-2003, 4 ♂ ♂, 14-VII-2003, Haman, 1 ♀, 28-VI-2003, Cheolma, GN, leg. T.S. Kwon.

**Distribution.** Korea, China.

#### 6. *Cheiracanthium unicum* Boesenberg & Strand, 1906

Previous records in Korea: Paik, 1990 (1 ♀, 26-VII-1964, Pychungsa, Miyang-gun, GN, leg. K.Y. Paik; 1 ♂, 7-VIII-1970, Gucheon village, Isl. Geoje-do, GN, leg. K.Y. Paik) - 1 ♂, 10-VII-1993, Mokgye, Chungju city, CB, leg. J. Namkung.

**Distribution.** Korea, China, Japan.

#### 7. *Cheiracanthium zhejiangense* Hu & Song, 1982

Previous records in Korea: Paik, 1990 (3 ♂ ♂, 18 ♀ ♀, 1-VII-1964, Jeju city, 1 ♀, 30-VI-1964, Samyang, 1 ♀, 30-VII-1937, Seoguipo, 1 ♀, 25-VI-1964, 1 ♀, 25-VI-1964, Cheonjeyeon, leg. K.Y. Paik, 2 ♂ ♂, 2-VIII-1981, 1 ♀, 21-VIII-1983, 1 ♀, 29-VII-1984, Gwaneumsa, Jeju city, JJ, leg. J. Namkung; 1 ♀, 3-IV-1966, Mt. Gwanmobong, Isl. Ulleung, GB, leg. Y.K. Kim; 1 ♀, 13-VI-1971, Seosin-ri, Haseong city, GG, leg. J. Namkung; 1 ♀, 15-VIII-1974, Mt. Chillak, Isl. Daeheusan, JJ, leg. J. Namkung)-1 ♂, 18-VI-1993, Daejin, Gangreung city, GW, leg. J. Namkung.

**Distribution.** Korea, China.

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