

⟨Original article⟩

Four New Species of the Genera *Trilacuna*, *Orchestina* and *Hahnia* of the Families Oonopidae and Hahniidae (Araneae) from Korea

Bo Keun Seo*

Major in Biological Sciences, Keimyung University, Daegu 42601, Republic of Korea

Abstract – Four new species of the spider genera *Trilacuna* Tong and Li, 2007, *Orchestina* Simon, 1882 and *Hahnia* C. L. Koch, 1841 are described from Korea; *Trilacuna hansanensis* n. sp., *Orchestina infirma* n. sp., *Hahnia montana* n. sp. and *Hahnia implexa* n. sp. The genera *Trilacuna* and *Orchestina* are reported from Korea for the first time.

Key words : *Hahnia*, Korea, new species, *Orchestina*, *Trilacuna*

INTRODUCTION

The spider family Hahniidae is characterized by the arrangement of their six spinnerets in a transverse row (Murphy and Murphy 2000), and includes 250 species in 28 genera worldwide (World Spider Catalog 2017). In total, 2 genera and 3 species have been recorded in Korea (Yoo *et al.* 2015). Oonopids are small spiders, usually with six eyes, often pale or vivid red in colour (Murphy and Murphy 2000), consisting of 1775 described species in 114 genera worldwide (World Spider Catalog 2017). Among them, 2 genera and 2 species have been recorded in Korea (Yoo *et al.* 2015).

While studying specimens collected during the Korean indigenous species survey, the author identified four new species, *Trilacuna hansanensis* n. sp., *Orchestina infirma* n. sp., *Hahnia montana* n. sp. and *Hahnia implexa* n. sp., and described with photos and illustrations.

MATERIALS AND METHODS

Leg measurements are given as: total (femur, patella, tibia, metatarsus, tarsus). The following abbreviations have

been used: c, carapace length; Leg I, length of leg I; AER, anterior eye row; ALE, anterior lateral eye; ALE-ALE, distance between ALEs; ALE-PME, distance between ALE and PME; ALE-PLE, distance between ALE and PLE; AME, anterior median eye; AME-ALE, distance between AME and ALE; AME-AME, distance between AMEs; AME-PME, distance between AME and PME; PER, posterior eye row; PLE, posterior lateral eye; PME, posterior median eye; PME-PLE, distance between PME and PLE; PME-PME, distance between PMEs. All measurements are given in millimeters. The type specimens are preserved in the National Institute of Biological Resources (NIBR), Ministry of Environment, Korea.

RESULTS AND DISCUSSION

Order Araneae Clerck, 1757 거미목
Family Oonopidae Simon, 1890 알거미과
Genus *Trilacuna* Tong and Li, 2007 삼열진드기거미속
(신칭)

***Trilacuna hansanensis* n. sp.** 한산진드기거미 (신칭)
(Fig. 1A-K)

Material examined: Holotype: ♂, mixed forest (37°47'17"

* Corresponding author: Bo Keun Seo, Tel. 053-580-5209,
Fax. 053-580-5558, E-mail. bkseo@kmu.ac.kr

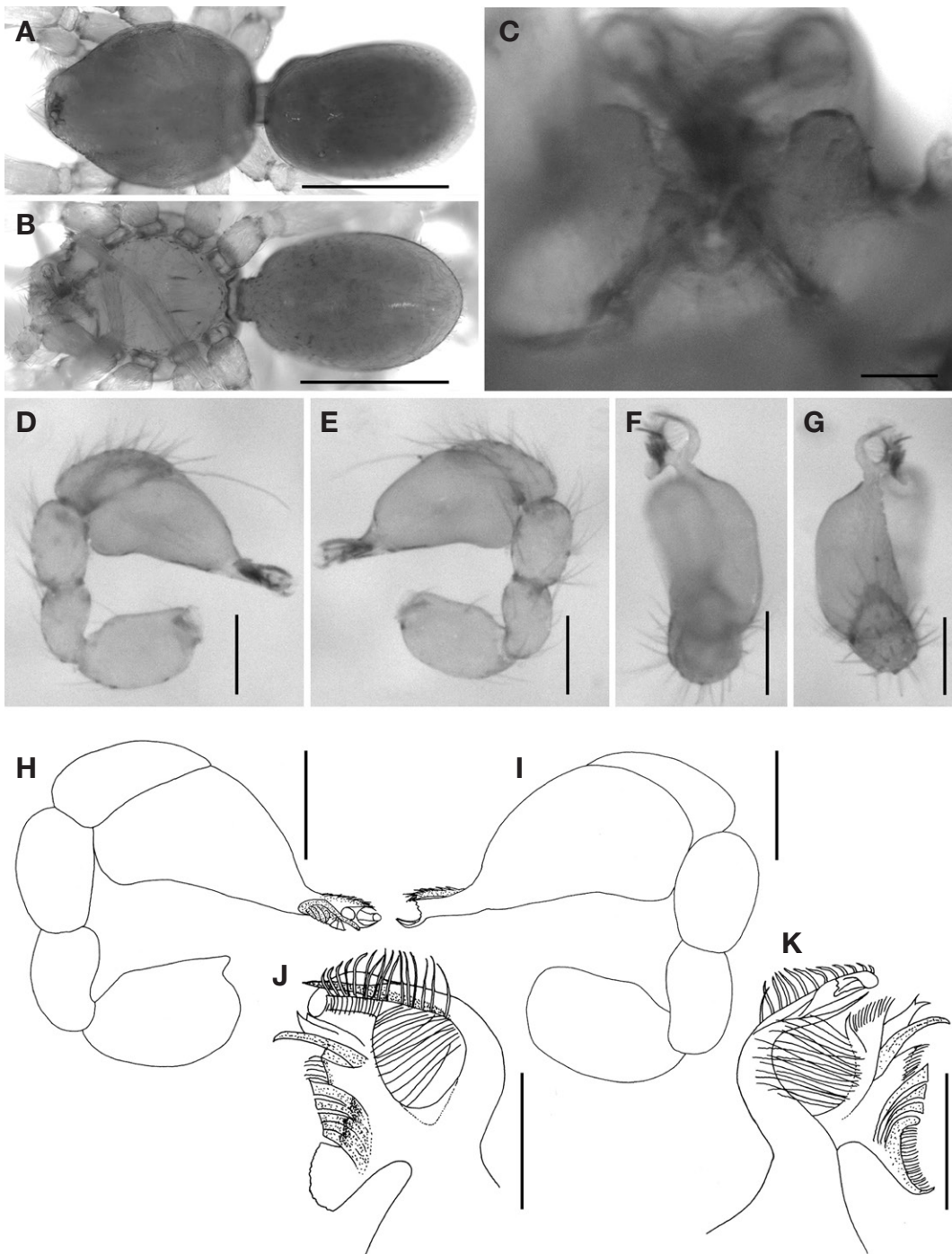


Fig. 1. *Trilacuna hansanensis* n. sp., male: A - habitus, dorsal view; B - ditto, ventral view; C - endites and labium; D, H - left palp, prolateral view; E, I - ditto, retrolateral view; F - ditto, ventral view; G - ditto, dorsal view; J - tip of left palpal bulb, ventral view; K - ditto, dorsal view. Scale bars: 0.5 mm (A-B), 0.1 mm (C-I), 0.05 mm (J-K).

N, 128°28'48"E, alt. 124 m), 2 km northwest of the summit of Mt. Mang, Hansan-myeon, Tongyeong-si, Gyeongsangnam-do, 14 July 2013, B. K. Seo. Paratype: 2♂♂, same data as holotype.

Etymology. The specific name comes from the type locality, Isl. Hansan.

Diagnosis. The male of *T. hansanensis* n. sp. is similar to that of *T. rastrum* Tong and Li, 2007 in the general appear-

ance, but can be easily distinguished from the latter by a pair of posterior chitinized ridges on the sternum and the difference of the protuberance on the base of the terminal hook of the bulb (Fig. 1B, J-K).

Description. Male (holotype). Total length 1.44. Habitus as in Fig. 1A-B. Carapace yellowish brown, chitinized, with short hairs medially and numerous granulates marginally, 0.72 long, 0.56 wide; clypeus height 2 times of diameter of ALE. AME absent. AER 0.10, PER 0.14; PER recurved slightly in dorsal view. ALE 0.04, PME 0.03, PLE 0.03, ALE-ALE 0.05, PME-PME 0.01, PME-PLE 0.02, ALE-PME 0.06, and ALE-PLE 0.01. Endite with a notch distally. Sternum with a pair of chitinized ridges posteriorly, 0.46 long, 0.40 wide. Labium with a notch at middle, 0.12 long, 0.14 wide. Leg measurements: I 1.81 (0.52, 0.26, 0.44, 0.33, 0.26), II 1.70 (0.48, 0.26, 0.38, 0.33, 0.25), III 1.51 (0.43, 0.22, 0.27, 0.33, 0.26), IV 2.08 (0.57, 0.30, 0.43, 0.44, 0.34). Leg I/c 2.51. Fem. I/c 0.72. Tib I/c 0.61. Met I/c 0.46. Pat. I+tib. I/c 0.97. Met. I/tar. I 1.27. Met. IV/tar. IV 1.29. Abdomen yellowish brown, chitinized, 0.82 long, 0.48 wide, elliptical. Palpal organ: femur enlarged; cymbium with a longish large bulb; terminal hook of bulb strongly bent, having a very complicate protuberance on the base (Fig. 1D-K).

Habitat: Mixed forest.

World Distribution: Korea (Gyeongsangnam-do).

Deposition: NIBR.

Identifier: Bo Keun Seo.

Genus *Orchestina* Simon, 1882 풀진드기거미속 (신칭)

Orchestina infirma n. sp. 풀진드기거미 (신칭) (Fig. 2A-G)

Material examined: Holotype: ♀, mixed forest (34°43'18" N, 127°57'44"E, alt. 102 m), 4 km southwest of the summit of Mt. Geum, Sangju-myeon, Namhae-gun, Gyeongsangnam-do, 19 July 2013, B. K. Seo. Paratype: 1♀, mixed forest around the campsite in Mt. Geumo (36°06'26"N, 128°19'05"E, alt. 128 m), Namtong-dong, Gumi-si, Gyeongsangbuk-do, 24 July 1992, S. G. Kim; 1♀, mixed forest (36°41'23"N, 129°20'15"E, alt. 176 m), 4.4 km southeast of the summit of Mt. Baekam, Onjeong-myeon, Uljin-gun, Gyeongsangbuk-do, 24 July 2010, J. C. Lim.

Etymology. The specific name is a Latin adjective, refer-

ring to the feeble body of the specimen.

Diagnosis. The female of *O. infirma* n. sp. is similar to those of *O. aureola* Tong and Li, 2011 and *O. flava* Ono, 2005 in the general appearance, but differs from *O. flava* by the shapes of the endite margin and the labium (Fig. 2B), and from *O. aureola* by the shapes of the lateral protrusions and the anterior uterine sclerite (Fig. 2D-G).

Description. Female (holotype). Total length 1.40. Habitus as in Fig. 2A. Carapace yellow without hairs, 0.66 long, 0.50 wide; clypeus height 2 times of diameter of ALE. AME absent. AER 0.21, PER 0.22; PER recurved slightly in dorsal view. ALE 0.05, PME 0.05, PLE 0.05, ALE-ALE 0.12, PME-PME 0.01, PME-PLE 0.04, ALE-PME 0.10, and ALE-PLE 0.01. Endites serrula present in single row on anterolateral margin. Sternum with black hairs, 0.36 long, 0.33 wide. Labium 0.13 long, 0.14 wide. Leg measurements: I 1.77 (0.52, 0.20, 0.43, 0.42, 0.20), II 2.02 (0.57, 0.21, 0.52, 0.49, 0.23), III 1.43 (0.44, 0.16, 0.30, 0.33, 0.20), IV 1.95 (0.62, 0.20, 0.39, 0.49, 0.25). Leg I/c 2.68. Fem. I/c 0.79. Tib I/c 0.65. Met I/c 0.64. Pat. I+tib. I/c 0.95. Met. I/tar. I 2.10. Met. IV/tar. IV 1.96. Abdomen oval and yellow, 0.70 long, 0.64 wide. Epigynum without special external features. Genitalia; anterior uterine sclerite long, with a pair of lateral protuberances and an anterior longitudinal duct (Fig. 2C-G).

Habitat: Mixed forest.

World Distribution: Korea (Gyeongsang-do).

Deposition: NIBR.

Identifier: Bo Keun Seo.

Family Hahniidae Bertkau, 1878 외줄거미과

Genus *Hahnina* C. L. Koch, 1841 외줄거미속

Hahnina montana n. sp. 언덕외줄거미 (신칭) (Fig. 3A-G)

Material examined: Holotype: ♂, mixed forest (36°40'35" N, 127°52'54"E, alt. 270 m), 14 km north of the summit of Mt. Songni, Cheongcheon-myeon, Goesan-gun, Chungcheongbuk-do, 5 July 2011, T. B. Ryu.

Etymology. The specific name comes from the Latin adjective and refers to the habitat of the specimen.

Diagnosis. The male of *H. montana* n. sp. is similar to that of *H. submaginii* Zhang, Li and Zheng, 2011 in having a curved retrolateral tibial apophysis and a bifurcate patella

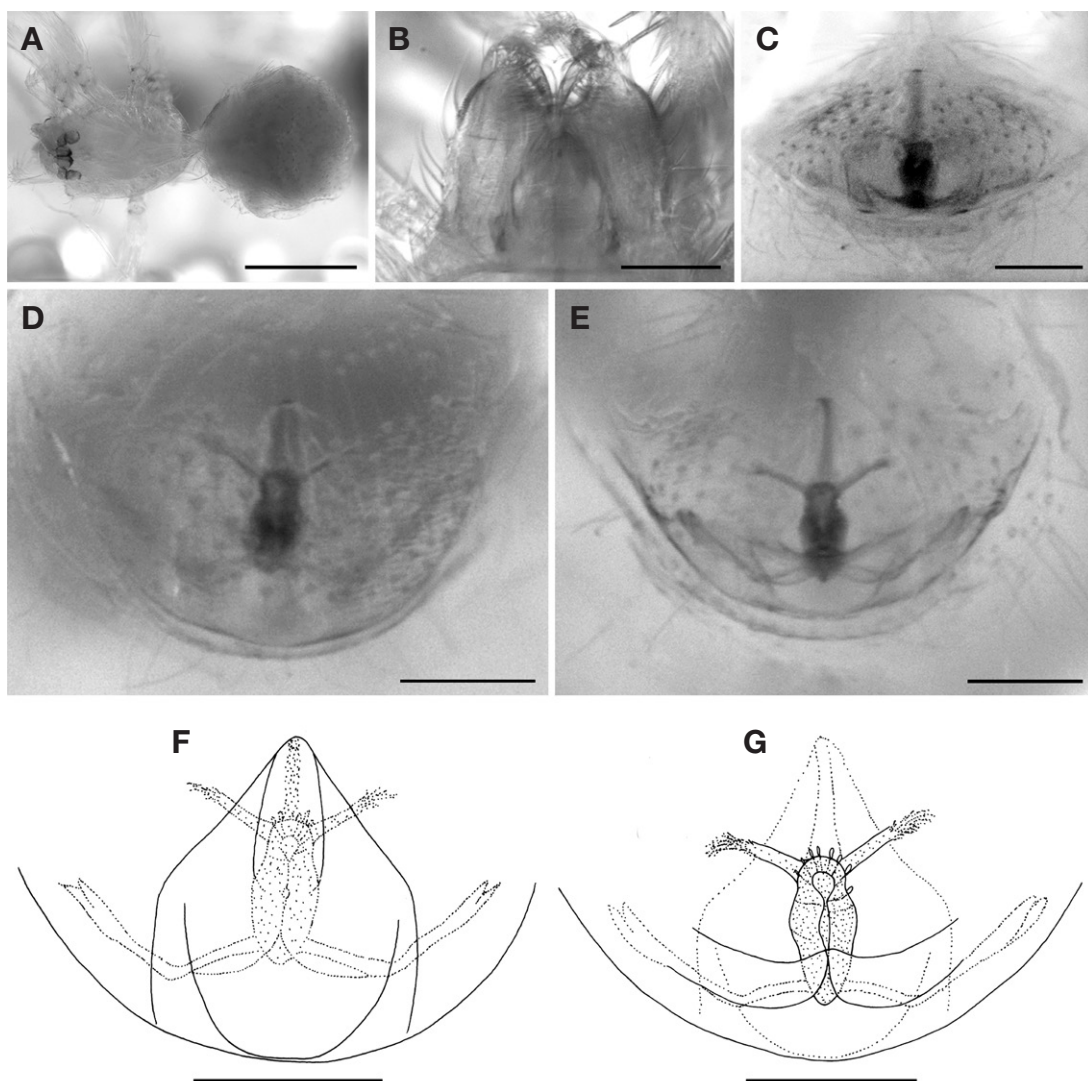


Fig. 2. *Orchestina infirma* n. sp., female: A - habitus, dorsal view; B - endites and labium; C - epigynum; D, F - internal genitalia, ventral view; E, G - ditto, dorsal view. Scale bars: 0.5 mm (A), 0.1 mm (rest).

apophysis on the palp, but can be distinguished from the latter by the shape of the tips of bifurcate patella apophysis (Fig. 3B-G).

Description. Male (holotype). Total length 1.27. Habitus as in Fig. 3A. Carapace yellow with two long hairs medially, 0.65 long, 0.53 wide; median furrow and cervical grooves indistinct; clypeus height 2.2 times of diameter of AME. AER 0.13, PER 0.16; AER retrocurved slightly and PER procurved in dorsal view. AME 0.03, ALE 0.04, PME 0.03, PLE 0.02, AME-AME contiguous, AME-ALE 0.01, PME-PME 0.03, PME-PL 0.02, AME-PME 0.01, and ALE-PL 0.01. Median ocular quadrangle, posterior

side > height > anterior side (15 : 14 : 10). Chelicera with three promarginal and four retromarginal teeth. Sternum 0.40 long, 0.40 wide. Labium 0.09 long, 0.14 wide. Leg measurements: I 1.49 (0.43, 0.21, 0.33, 0.23, 0.29), II 1.41 (0.42, 0.21, 0.26, 0.25, 0.27), III 1.17 (0.33, 0.18, 0.20, 0.23, 0.23), IV 1.53 (0.43, 0.22, 0.30, 0.29, 0.29). Leg I/c 2.29. Fem. I/c 0.66. Tib I/c 0.51. Met I/c 0.35. Pat. I + tib. I/c 0.83. Met. I/tar. I 0.79. Met. IV/tar. IV 1.00. Abdomen 0.69 long, 0.53 wide, oval; dorsum dark gray with five faint chevron markings; venter yellow without markings. Palpal organ; embolus originating distally, curving around tegulum; retrolateral tibial apophysis long and curved dorsally; retrolater-

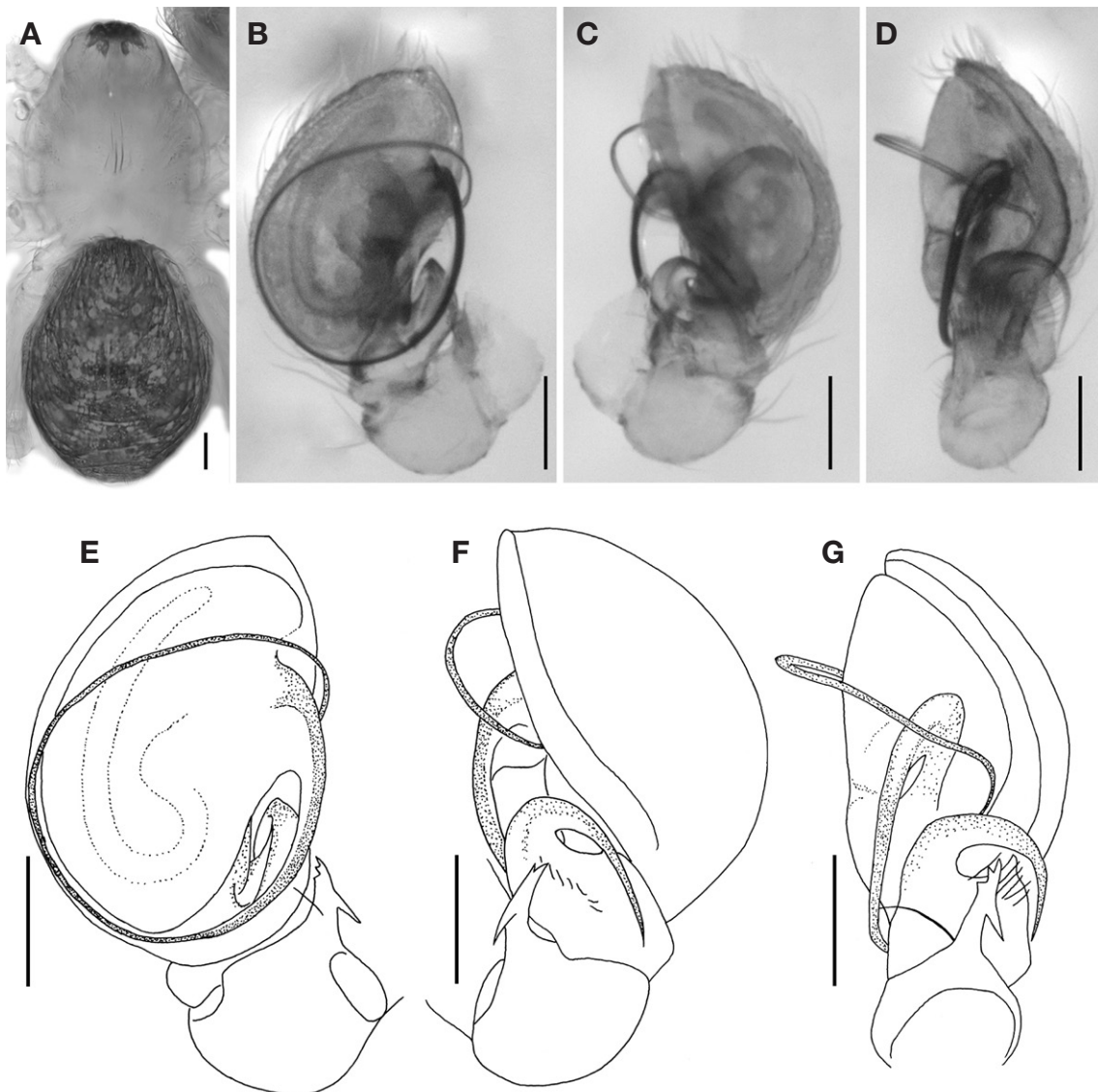


Fig. 3. *Hahnia montana* n. sp., male: A - habitus, dorsal view; B, E - left palp, ventral view; C, F - ditto, retrolateral view; D, G - ditto, ventro-retrolateral view. Scale bars: 0.1 mm.

al patella apophysis bifurcate, proximal tip spine-like, distal tip with three small denticles (Fig. 3B-G).

Habitat: Mixed forest.

World Distribution: Korea (Chungcheongbuk-do).

Deposition: NIBR.

Identifier: Bo Keun Seo.

***Hahnia implexa* n. sp.** 지리외줄거미 (신칭) (Fig. 4A-H)

Material examined: Holotype: ♀, mixed forest (35°21'21" N, 127°32'04"E, alt. 953 m), 17 km west of the summit of

Mt. Jiri, Sannae-myeon, Namweon-si, Jeollabuk-do, 30 June 2010, J. C. Lim. Paratype: 1 ♀, same data as holotype.

Etymology. The specific name comes from the Latin adjective, meaning "entwined" and refers to the shape of the copulatory ducts in the female genitalia.

Diagnosis. The female of *H. implexa* n. sp. is very similar to that of *H. senaria* Zhang, Li and Zheng, 2011 in the general appearance, but can be easily distinguished from the latter by the shape of internal genitalia (Fig. 4E-H).

Description. Female (holotype). Total length 1.18. Habitus as in Fig. 4A. Carapace yellow with two long hairs medially,

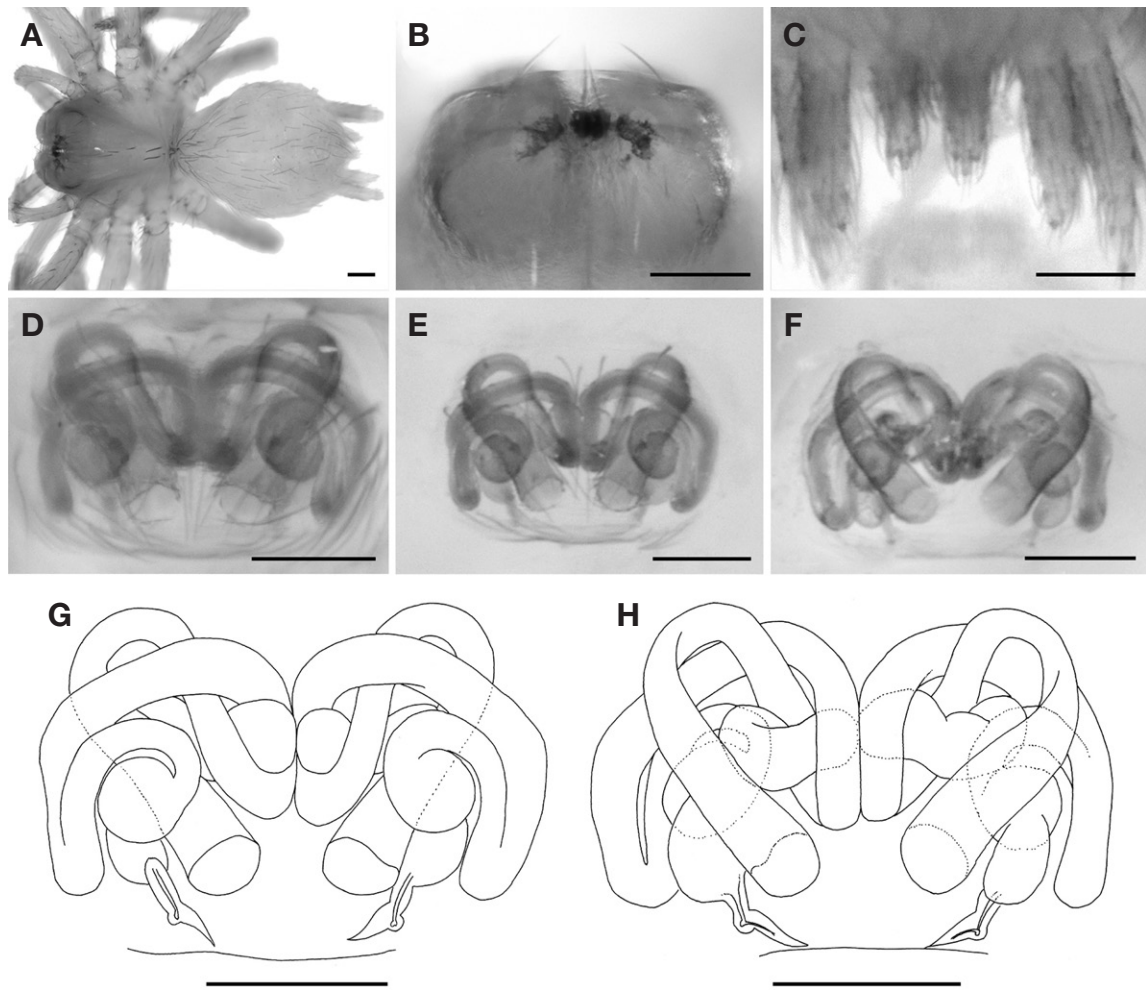


Fig. 4. *Hahnia implexa* n. sp., female: A - habitus, dorsal view; B - eye area; C - spinnerets, ventral view; D - epigynum; E, G - internal genitalia, ventral view; F, H - ditto, dorsal view. Scale bars: 0.1 mm.

0.73 long, 0.53 wide; median furrow and cervical grooves indistinct; 0.73 long, 0.53 wide; clypeus height 3 times of diameter of AME. AER 0.13, PER 0.16; AER retrocurved slightly in dorsal view. AME 0.02, ALE 0.04, PME absent (Fig. 4B), PLE 0.04, AME-AME contiguous, AME-ALE 0.01, and ALE-PLE contiguous. Chelicera with both margins having three teeth each. Sternum 0.41 long, 0.37 wide. Labium 0.08 long, 0.13 wide. Leg measurements: I 1.50 (0.44, 0.19, 0.31, 0.28, 0.28), II 1.38 (0.40, 0.19, 0.26, 0.28, 0.25), III 1.32 (0.36, 0.18, 0.25, 0.28, 0.25), IV 1.74 (0.48, 0.21, 0.36, 0.36, 0.33). Leg I/c 2.05. Fem. I/c 0.60. Tib I/c 0.42. Met I/c 0.38. Pat. I+tib. I/c 0.68. Met. I/tar. I 1.00. Met. IV/tar. IV 1.00. Abdomen oval, with black hairs, 0.68 long, 0.53 wide. Epigynum; a pair of copulatory openings in middle on epigynal plate; genital ducts of two pairs of

spermathecae much elongated and highly coiled; fertilization ducts very long, well developed (Fig. 4D-H).

Habitat: Mixed forest.

World Distribution: Korea (Jeollabuk-do).

Deposition: NIBR.

Identifier: Bo Keun Seo.

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