

A Revision of the Genus *Synagelides* Strand, 1906 (Araneae, Salticidae) in Korea

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ABSTRACT

Two *Synagelides* species, *S. agoriformis* Boesenberg et Strand, 1906 and *S. zhilcovae* Proszynski, 1976 from Korea were revised with accurate illustration and identification key. The latter species is newly recorded in the Korean spider fauna. These species can be easily identified by the copulatory openings and the position of the genital organs with copulatory canal and spermatheca.

Key words: *Synagelides*, *S. agoriformis*, *S. zhilcovae*, Korea

INTRODUCTION

Thirty species of a little ant-like *Synagelides* have been recorded 30 species with 2 undetermined species up to date all over the world; 9 species from Palaearctic region, 21 species from Oriental region (Proszynski, 1999). This genus can be clearly distinguished from other genera of the salticid spiders by the appearance of somewhat ant-like, the modified palpal organs of males. Since the first report by Nam and Yoon (1980) as only female of *S. agoriformis* with epigynum, this only one species of the genus *Synagelides* can be frequently found in the Korean spider fauna. In this paper, *S. zhilcovae* to be collected in Mt. Odaesan, Gangwon-do, is reported for the first time in Korea. As a result, two species has been recorded in Korea. All measurements given are in millimeters.

The spelling of Korean locations follows "The Romanization of Korean Place" (Ministry of Culture and Tourism & Natural Academic of the Korean Language, 2000).

The abbreviations used in this paper are as follows: TL Total length, CL/CW Carapace Length/Width, AL/AW Abdomen Length/Width, SL/SW Sternum Length/Width, L1ER Length of 1st Eye

Row, L2ER Length of 2nd Eye Row, L3ER Length of 3rd Eye Row, HOQ Height of Ocular Quadrangle, P2ER Position of 2nd Eye Row, AME Anterior Median Eye, ALE Anterior Lateral Eye, PME Posterior Median Eye, PLE Posterior Lateral Eye.

RESULTS

Genus *Synagelides* Strand, 1906 어리개미거미속

Type species: *S. agoriformis*

Synagelides Strand, in Boesenberg et Strand, 1906, p. 330; Proszynski, 1979, p. 319; Bohdanowicz and Proszynski, 1987, pp. 312-313.

Tagoria Schenkel 1963, p. 394

Diagnosis. The genus *Synagelides* appears somewhat ant-like, although less than typical ant-like genera. In most species there is a bifid retromarginal tooth, in some species reduced to a single tooth. The biggest characteristic is the modified male palpus: large overgrown patella articulating at right angle with small femora relatively, and other parts of the palpal organ are also very special. Epigyne has diagonal pockets opening with complicated surface. Internal organs show 2 separate units of sclerotized parts: anterior unit near copulatory openings and posteriorly lying spermathecal unit. It can be also recognized by very long and stout spines on metatarsi and tibiae I.

Key to species of Korean *Synagelides*

1. Spiders not ant-like. other genera
- Spiders ant-like and legs I very long (particularly in Metatarsus). 2
2. Cephalothorax constricted, eye field distinctly elevated above thorax, which is constricted; Male chelicerae greatly enlarged, and projecting forwards. Female pedipalps flat. *Myrmarachne* spp.
- Modified male palpus, large overgrown patella articulating at right angle with relatively small femur; small chelicerae with bifid retromargin tooth and 1 promargin. Five pairs of very slender spines in tibia I and two in metatarsus I. Female pedipalps not flat. 3
3. Copulatory ducts to be medially both copulatory opening and spermatheca to see an ellipse in ventral view. *S. agoriformis*
- Copulatory ducts to be under copulatory opening and spermatheca is not to see in ventral view. The anterior parts of the copulatory canals, much broader and spermathecae, much closer to these broad parts. *S. zhilcova*

***S. agoriformis* Strand, 1906 어리개미거미 (Fig. 1)**

S. agoriformis Boesenberg et Strand, 1906, p. 330; Proszynski, 1976, m. 209; 1979, p. 318, figs. 307-315; Bohdanowicz, 1979, p. 55, figs. 4-8; Namkung, 1980a, p. 122; 1980b, p. 40; 1986, p. 38; Namkung and Yoon, 1980, p. 19, fig. 5(F); Wesolowska, 1981, p. 82; Namkung and Paik, 1982, p. 391; Dunin, 1984, p. 139, figs. 63-64 (MF) [Primore]; Kim and Yoo, 1986, p. 67; Yaginuma, 1986, p. 237, fig. 133.1 (MF); Bohdanowicz and Proszynski, 1987, pp. 133-138, figs. 268-279 (DMF); Bohdanowicz, 1987, p. 65, figs. 1-4, 73-74 (MF); Xie and Yin, 1990, p. 301,

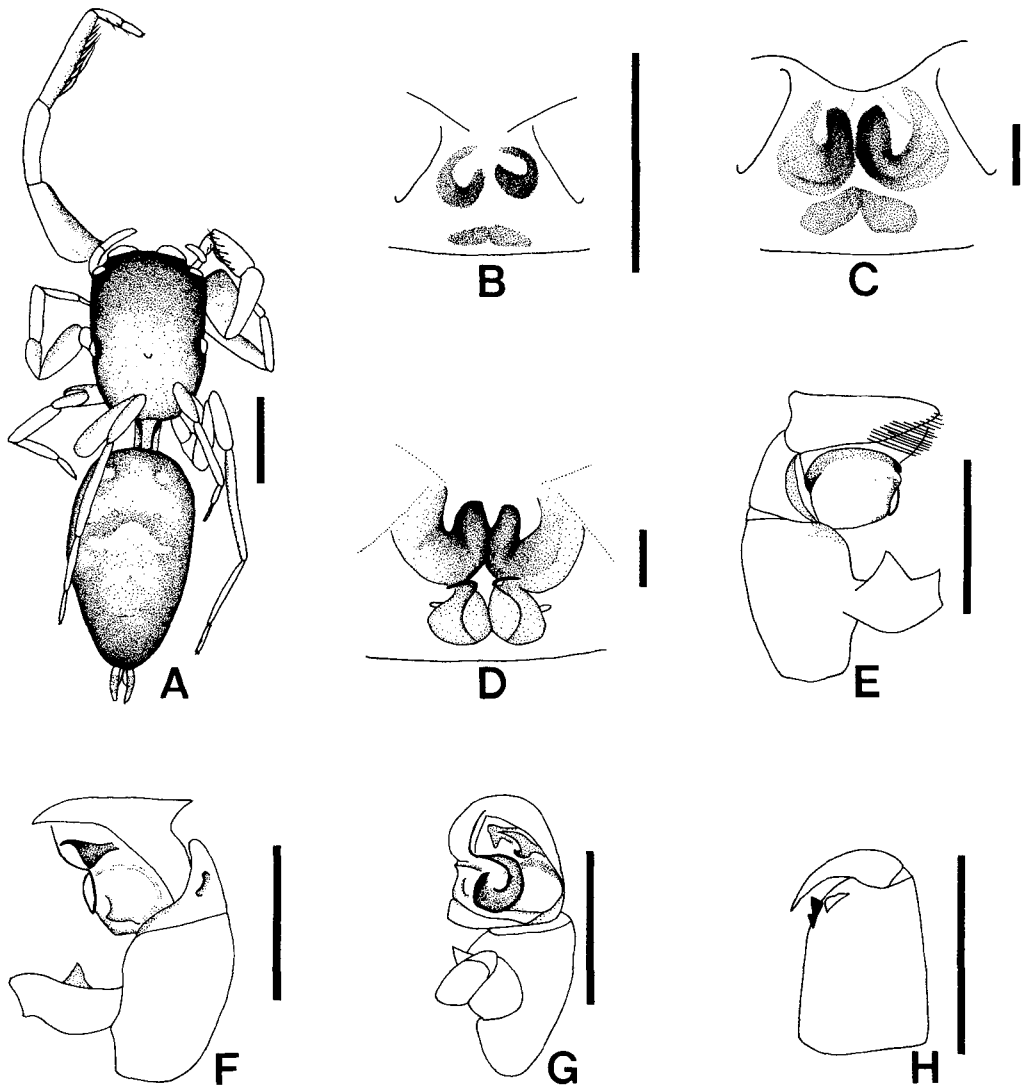


Fig. 1. *Synagelides agoriformis*: A, female, dorsal view; B, epigynum, ventral view; C, genitalia, ventral view; D, ditto, dorsal view; E, left palpal organ, prolateral view; F, ditto, retrolateral view; G, ditto, ventral view; H, female, left chelicera, retrolateral view. Scale lines: 0.1 mm (C and D), 0.5 mm (B, E, F, G, and H), 1 mm (A)

304 (N); Chikuni, 1989, p. 158, fig. 52 (MF); Peng *et al.*, 1993, p. 222, figs. 787-794 (MF); Song *et al.*, 1999, p. 561, figs. 317Q, 318H-I, 319A.

Specimens examined. 1 ♂, Hamgyeongnam-do, Mt. Myohyangsan (North Korea), 5 Aug. 1959, ?; 1 ♀, Manpo-dong valley, 19 Jun. 1965; 1 ♂, Hapiro valley (North Korea), 20-21 Jun. 1965; 1 ♀, 1 juv. Jeongbok-ri (North Korea), 8 Jun. 1965, ?; 1 ♂, Hamheung-si, Hongbok-ri (North Korea), 12 Jun. 1965, ?; 1 ♂, Hamgyeongbuk-do, Onpo-ri (North Korea), 8-11 Sep. 1966, ?; 1 ♀, Gyeongsangbuk-do, Mt. Geumreungsan, 10 Jun. 1962, E. I. Paik; 1 ♀, Gyeonggi-do, Gwangreung, 1 Apr. 1964, Y. K. Kim; 1 ♀, Gyeongsangnam-do, Geojedo Gabae, 24 Jul.

Table 1. Measurement of leg segments of *Synagelides agoriformis* from Korea (♂/♀).

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg I	1.70/1.33	1.35/0.99	1.35/1.15	0.72/0.61	0.39/0.37	5.51/4.45
Leg II	1.07/0.91	0.57/0.52	0.74/0.67	0.72/0.63	0.35/0.35	3.45/3.08
Leg III	1.04/0.96	0.52/0.50	0.80/0.70	0.89/0.80	0.37/0.35	3.62/3.31
Leg IV	1.41/1.28	0.70/0.67	1.24/1.20	1.24/1.20	0.48/0.46	5.07/4.81

1964, K. Y. Paik; 1 ♂, 2 ♀, Gyeongsangnam-do, Miyang, Pyochungsa, 28 Jul. 1964, K. Y. Paik; 1 ♂, Chungcheongnam-do, Joryeong, 18 Aug. 1964, K. Y. Paik; 1 ♀, Jeju-do, Mt. Hallasan, 2 Aug. 1969, K. Y. Paik; 1 ♂, Busan-si, Mt. Geumjeongsan, 5 May, 1075, J. H. Kim; 2 ♀ ♀, Daegu-si, Pagyesa, 20 May, 1978, B. S. Cho; 1 ♂, 1 ♀, Daegu-si, Mt. Daedeoksan, 21 May, 1978, K. J. Kim; 2 ♀ ♀, Gyeongsangnam-do, Namhae, 15 Jul. B. K. Seo; 2 ♀ ♀, Gyeongsangnam-do, Guni-si, Mt. Geumosan, 6 Jun. 1983, K. S. Park; 1 ♀, Jeju-do, Mt. Hallasan, 19 Aug. 1984, J. P. Kim; 1 ♂, 11 ♀ ♀, Daegu-si, Mt. Palgongsan, 11 May 1985, K. M. Kim and Y. K. Kwon; 1 ♂, 1 ♀, 12 Aug. 1985, M. H. Lee; 1 ♀, Gyeonggi-do, Namyangju-si, Joangmyeon, Jinjung-ri, 11 Nov. 1996, 1 ♂, 6 Jun. 1997, 2 ♂ ♂, 3 May 2000, 4 ♂ ♂, 2 ♀ ♀, 31-1 May-Jun. 2000, 1 ♂, 17 Jul. 2000, 1 ♂, 2 Aug. 2000, B. W. Kim; 1 ♂, Gangwon-do, Goseong-gun, 24 Jun. 1999, B. W. Kim; 1 ♂, Seoul, Nowon-gu, Mt. Bulamsan, 15 Jun. 2000, B. W. Kim. Male. TL 4.75, CL/CW 2.02/1.35, AL/AW 2.5/1.24, SL/SW 0.87/0.63, L1ER 1.33, L2ER 1.11, L3ER 1.33, HOQ 1.24, P2ER 0.63, AME 0.39, ALE 0.24, PME 0.05, PLE 0.24.

Cephalothorax elongated, brown, eye field large. Sternum pale. Abdomen elongated, grey with white pattern. Legs yellow with dark streaks on femora, broadest on femur I. Chelicerae dark brown 1 promarginal tooth and 1 retromarginal. Legs brown, 5 pairs of long spines on the ventral side of tibiae I, 2 pairs on the ventral of metatarsus I. Leg formula I IV III II and index 100 : 63 : 66 : 92. Measurements of leg segments is Table 1.

Pedipalps short, robust and swollen patella with rather very peculiar shape. On prolateral side of femur a distinct tooth, femoral apophysis articulating with a protuberance on patella (Fig. 1F). Embolus spirally coiled and bulbus with apical husky apophysis on retrolateral side (Fig. 1G).

Female. TL 4.60, CL/CW 1.85/1.24, AL/AW 2.50/1.26, SL/SW 0.85/0.57, L1ER 1.35, L2ER 1.13, L3ER 1.35, HOQ 1.22, P2ER 0.67, AME 0.43, ALE 0.24, PME 0.05, PLE 0.22.

5 pairs of long spines on the ventral side of tibiae I, 2 pairs on the ventral of metatarsi I. Leg formula IV I III II and index 100 : 69 : 74 : 108. Measurements of leg segments is presented in Table 2. Coloration resemble as male (Fig. 1A).

Epigyne diagonal pockets opening laterally, anteriorly possessing a second pair of smaller and deeper grooves. Copulatory opening to be medially both copulatory ducts and spermatheca to see a ellipse in ventral view (Fig. 1B, 1C and 1D).

Distribution. China, Japan, Korea, USSR: Primore.

***S. zhilcova* Proszynski, 1979 월정어리개미거미 (Fig. 2)**

S. zhilcova Proszynski, 1976, m. 209 (nom. nud.); 1979, p. 319, figs. 316-317 (D F); Dunin, 1984, p. 139, figs. 65 (MF); Xie and Yin, 1990, p. 302; Peng *et al.*, 1993, p. 229, figs. 816-818

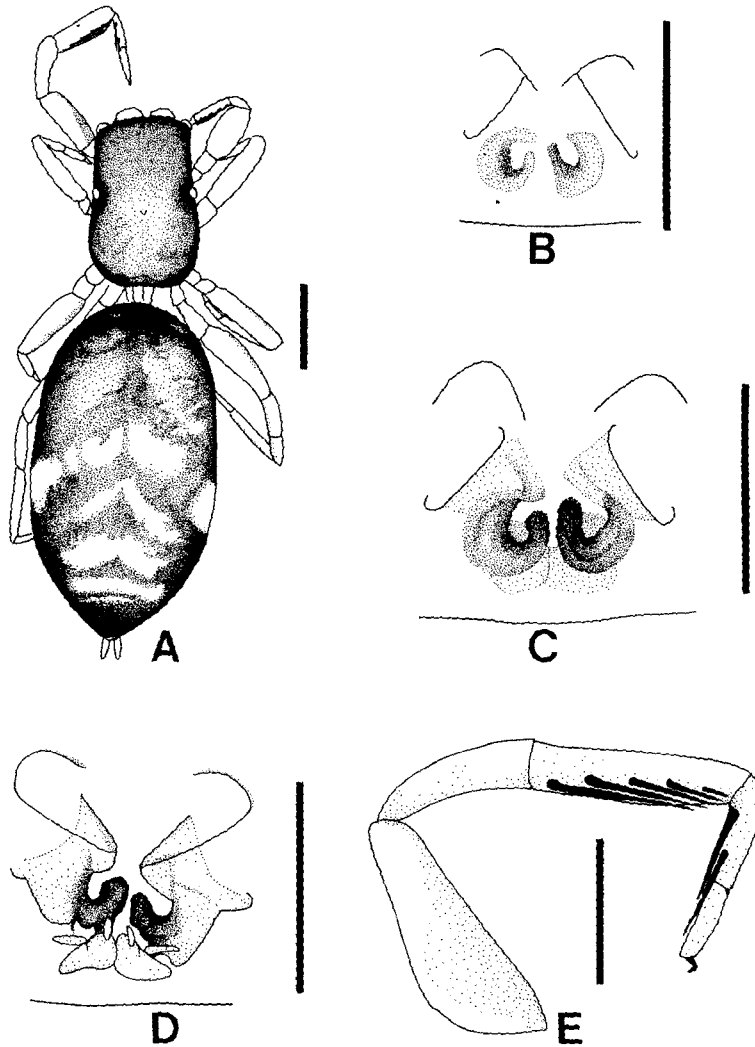


Fig. 2. *Synagelides zhilcova*: A, female, dorsal view; B, epigynum, ventral view; C, genitalia, ventral view; D, ditto, dorsal view. E, left leg I, prolateral view. Scale lines: 0.1 mm (C and D), 0.5 mm (B and E), 1 mm (A).

(F); Song, *et al.*, 1999, p. 561, figs. 320H, 321A, 329R.

Material examined. 1 ♀, Gangwon-do, Gangreung-si, Woljeungsa, 29 Jun. 1997, B. W. Kim.

Description.

Female. TL 6.00; CL/CW 2.1/1.3; AL/AW 3.9/2.0; SL/SW 0.89/0.63; L1ER 1.24; L2ER 1.02; L3ER 1.26; HOQ 1.13; P2ER 0.59; AME 0.370; ALE 0.217; PME 0.065; PLE 0.196.

Carapace black brown; eye field black, diameter of AME about twice that of ALE, PME at the mid-point between ALE and PLE; Fovea very small and “u” mark (Fig. 2A). Sternum brown, a oval no to be setae. Chelicerae dark brown with short white and long brown setae, teeth stout, 2 promarginal ones and 1 retromarginal. Endites and labium dark brown. Legs brown, 5 pairs of long spines similarly arranged on the ventral side of tibiae I, 2 pairs reaching almost the end of tibia on the ven-

Table 2. Measurement of leg segments of *Synagelides zhilcovae* from Korea.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg I	1.15	0.87	1.02	0.59	0.35	3.98
Leg II	0.91	0.50	0.70	0.65	0.35	3.11
Leg III	0.95	0.50	0.78	0.87	0.37	3.47
Leg IV	1.26	0.61	1.26	1.22	0.43	4.78

tral of metatarsus I (Fig. 2E). Leg formula IV I III II and index 100 : 78 : 87 : 120. Measurements of leg segments is presented in Table 2.

Abdomen elongated ellipse, dorsum greyish black, on its median area a longitudinal lightly colored band with serrated margins (Fig. 2A). Spinnerets greyish black.

Epigynal pocket wide, copulatory opening diagonal and copulatory ducts to be under copulatory opening and spermatheca is to see in ventral view (Fig. 2B). Genitalia, 2 separate units of sclerotized parts: anterior unit near copulatory openings and posteriorly lying spermathecal unit (Fig. 2C and 2D). The anterior parts of the copulatory canals much broader and spermathecae much closer to these broad parts (Fig. 2D).

Male. Unknown.

Distribution. China, Korea, USSR.

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한국산 어리개미거미속 (거미목, 깡충거미과)의 재기재

김 병 우 · 김 주 필

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요 약

한국산 어리개미거미속의 2종, 어리개미거미 (*Synagelides agoriformis*)와 월정 어리개미거미 (*S. zhilcovae*)을 정확한 그림과 검색표와 더불어 재기재하였으며, 이 중 월정어리개미거미는 한국미기록종이다. 이들은 생식구, 생식관 그리고 수정낭의 위치와 모양에 의해 쉽게 동정할 수 있다.