

# Four Linyphiid Spiders (Araneae: Linyphiidae) New to Korea

Bo Keun SEO\*

Department of Biology, Keimyung University, Daegu, 704-701, Korea

## 접시거미류(거미목: 접시거미과)의 4 한국 미기록종

서보근\*

계명대학교 생물학과

**ABSTRACT:** Four linyphiid species, *Centromerus sylvaticus* (Blackwall, 1841), *Ryojius japonicus* Saito and Ono, 2001, *Sachaliphantes sachalinensis* (Tanasevitch, 1988) and *Tmeticus vulcanicus* Saito and Ono, 2001, are reported new to the Korean fauna. Four genera, *Centromerus* Dahl, 1886, *Ryojius* Saito and Ono, 2001, *Sachaliphantes* Saaristo and Tanasevitch, 2004 and *Tmeticus* Menge, 1868, are also new to Korea. Diagnostic phototographs and illustrations of species are provided.

**Key words:** *Centromerus sylvaticus*, *Ryojius japonicus*, *Sachaliphantes sachalinensis*, *Tmeticus vulcanicus*

**초 록:** 접시거미 4종 을 한국미기록종으로 보고한다; *Centromerus sylvaticus* (Blackwall, 1841) (가우리접시거미), *Ryojius japonicus* Saito and Ono, 2001 (오이접시거미), *Sachaliphantes sachalinensis* (Tanasevitch, 1988) (극동접시거미), *Tmeticus vulcanicus* Saito and Ono, 2001 (화산에접시거미). 4속 역시 한국미기록속이다; *Centromerus* Dahl, 1886 (가우리접시거미속), *Ryojius* Saito and Ono, 2001 (오이접시거미속), *Sachaliphantes* Saaristo and Tanasevitch, 2004 (극동접시거미속), *Tmeticus* Menge, 1868 (유럽에접시거미속). 종의 사진 자료와 진단을 위한 그림이 제공된다.

**검색어:** 가우리접시거미, 극동접시거미, 오이접시거미, 화산에접시거미

Linyphiidae contains 590 described genera and 4425 species described up to 2013 (Platnick, 2013). This makes Linyphiidae the second largest family of spiders (Hormiga, 1994; Platnick, 2013). The linyphiid spiders, with few exceptions, are ground-living, and are found in moss, grass and leaf litter, under stones, and on bushes (Locket and Millidge, 1953). Most of them build small sheet webs (Roberts, 1995). A total of 82 linyphiid species in 42 genera have been reported from Korea (Namkung et al., 2009).

During the 2007-2010 survey of indigenous species in the Korean Peninsula, four species, *Centromerus sylvaticus* (Blackwall, 1841), *Ryojius japonicus* Saito and Ono, 2001,

*Sachaliphantes sachalinensis* (Tanasevitch, 1988) and *Tmeticus vulcanicus* Saito and Ono, 2001, were found to be new to the Korean spider fauna and are reported here. Four genera, *Centromerus* Dahl, 1886, *Ryojius* Saito and Ono, 2001, *Sachaliphantes* Saaristo and Tanasevitch, 2004 and *Tmeticus* Menge, 1868, are also new records to Korea.

The genus *Centromerus* comprises 86 recognized species, of which 84 are found in the Northern Hemisphere, and 76 of the 84 species are known from the Palearctic region. Only one species, *Centromerus sylvaticus*, has a Holarctic distribution (Platnick, 2013). The genus *Ryojius* was represented by three species; *Ryojius japonicus* Saito and Ono, 2001 and *Ryojius occidentalis* Saito and Ono, 2001 are known from Honshu and Kyushu, Japan (Saito and Ono, 2001), and *Ryojius nanyuensis* (Chen and Yin, 2000) from Hunan, China (Chen and Yin, 2000). *R.*

\*Corresponding author: bkseo@kmu.ac.kr

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*japonicus* in Korea is known from the southern region of the Peninsula. The genus *Sachaliphantes* comprises only one species, *Sachaliphantes sachalinensis* (Tanasevitch, 1988), which was found in Sakhalin (Russia) (Tanasevitch, 1988), Jilin (China) (Tao et al., 1995) and Hokkaido (Japan) (Ono et al., 2009), and which is newly recorded in Gangwon-do Province (Korea). Seven species of the genus *Tmeticus* are known from Palearctic (5), Nearctic (1) and Holarctic region (1) (Platnick, 2013). *T. vulcanicus* was originally found from Miyakejima and Kanagawa (Japan) (Saito and Ono, 2001), and is also found to be distributed at Jangdo, an island about 94km southwest of Mokpo (Jeollanam-do, Korea).

## Materials and Methods

Specimens were examined, drawn and measured under a stereomicroscope (Leica S8APO, Singapore). The photographs were made using a digital camera (Leica DFC 420) and the images were combined using image stacking software (i-Solution, Future Science Co. Ltd., Taejeon, Korea). The following abbreviations are used in the text: AME, anterior median eye; ALE, anterior lateral eye; PME, posterior median eye; PLE, posterior lateral eye; AER, anterior eye row; PER, posterior eye row; AME-AME, distance between AMEs; PME-PME, distance between PMEs; AME-ALE, distance between AME and ALE; PME-PLE, distance between PME and PLE; ALE-PLE, distance between ALE and PLE; MOQ, median ocular quadrangle; c, carapace length; Tm, position of trichobothrium on tibia; d, p, r and v in leg spination, dorsal, prolateral, retrolateral and ventral side. The sequence of leg segments in measurement data is as follows: total (femur, patella, tibia, metatarsus, tarsus). All measurements in the text are in millimeters. The materials examined are deposited in National Institute of Biological Resources (NIBR) of Ministry of Environment of Korea.

## Taxonomic Accounts

### Family Linyphiidae Blackwall, 1859

#### Genus *Centromerus* Dahl, 1886 가우리접시거미속(신칭)

*Centromerus* Dahl, 1886: 69, 73. Type species: *Centromerus*

*brevivulvatus* Dahl, 1912: 614.

Promargin of chelicerae with three teeth. In several species the chelicerae have a longitudinal row of minute bristles, close to and parallel with the external border. Metatarsus IV without trichobothrium; Tm I ca. 0.35. All tibiae, except IV, have two dorsal spines, tibia IV has one or two dorsal spines. Epigynum usually with a scape. Male palpal patella with a stout dorsal spine, C-shaped large paracymbium (Locket and Millidge, 1953; Roberts, 1987).

#### *Centromerus sylvaticus* (Blackwall, 1841) 가우리접시거미(신칭) (Figs. 1-7)

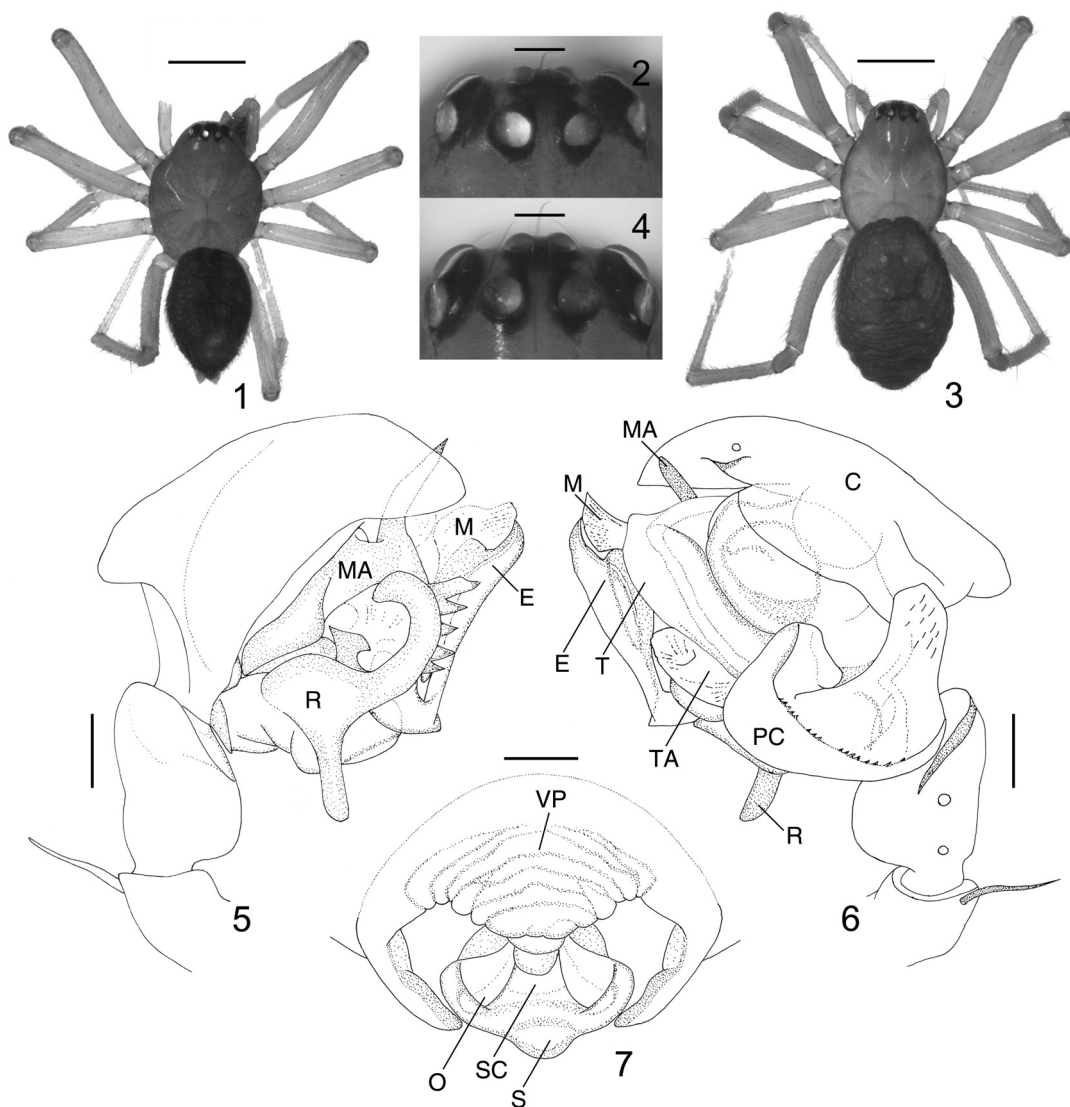
*Neriene sylvatica* Blackwall, 1841: 644.

*Centromerus sylvaticus*: Dahl, 1886: 74.

*Centromerus sylvaticus*: Holm, 1945: 42; Locket and Millidge, 1953: 349; Wiehle, 1956: 37; Oi, 1960: 189; Merrett, 1963: 368; Miller, 1971: 244; Roberts, 1987: 128; Chikuni, 1989: 53; Tanasevitch, 1990: 15; Heimer and Nentwig, 1991: 126; Millidge, 1993: 152; Hu, 2001: 494; Ono et al., 2009: 325.

**Diagnosis.** This species is very similar to *C. denticulatus* (Emerton, 1909) in the shape of the paracymbium with denticles and the radix, but easily distinguished by the dentition of the paracymbium and the median membrane with five large teeth on scleite base (Figs. 5-6).

**Description.** Male : Carapace yellowish brown, cervical and radial groove distinct, median furrow distinct (Fig. 1). Clypeus height 5.5 times of diameter of AME. AER slightly recurved and PER procurved in dorsal view (Fig. 2). Eye ratio, ALE > PME = PLE > AME (8.5 : 8 : 4). MOQ, posterior side > height > anterior side (18 : 12 : 11). Chelicerae with three promarginal teeth. Sternum and labium dark brown. Legs yellow. Leg I/c 3.45. Fem. I/c 1.01. Tib. I/c 0.96. Met. I/c 0.80. Met. I/tar. I 2.00. Met. IV/tar. IV 1.68. Femur I and II with 2 and 1 dorsal spine, respectively. Tibial chaetotaxy 2-2-2-2, tibia I with one prolateral spine. Tm I 0.44. II 0.40, III 0.33 and IV absent. Abdomen oval and dark brown. Palpal tibia with sclerized tip dorsally. Paracymbium large and concaved, and adorned with sixteen small denticles along the outer margin. Median apophysis with a long and slender apical branch. Radix with a longish knob at the base and a bent knob anteriorly. Embolus slightly curved, its tip covered by the median membrane, and the



**Figs. 1-7.** *Centromerus sylvaticus* (Blackwall, 1841): 1. male, dorsal view; 2. male eye area, dorsal view; 3. female, dorsal view; 4. female eye area, dorsal view; 5. male left palp, prolateral view; 6. ditto, retrolateral view; 7. female epigynum. Abbreviations: C, cymbium; E, embolus; M, median membrane; MA, median apophysis; O, genital opening; PC, paracymbium; R, radix; S, genital socket; SC, scape; T, tegulum; TA, terminal apophysis; VP, ventral plate. Scale lines: 0.5 mm (1, 3), 0.1 mm (2, 4-7).

latter bearing five large teeth on scleite base (Figs. 5-6).

Female : Cephalic region reddish brown. General appearance is similar to male (Fig. 3). Clypeus height 3.8 times of diameter of AME. AER recurved and PER slightly recurved in dorsal view (Fig. 4). Eye ratio, Eye ratio, ALE > PME = PLE > AME (9 : 7.5 : 5). MOQ, posterior side > height > anterior side (20 : 17.5 : 12). Leg I/c 3.45. Fem. I/c 0.98. Tib. I/c 0.93. Met. I/c 0.76. Met. I/tar. I 1.51. Met. IV/tar. IV 1.83. Femur I and II with 2 dorsal spines, and femur I with one prolateral spine. Tibial chaetotaxy 2-2-2-2. Tm I 0.38. II 0.35, III 0.30 and IV absent. Epigynum

transversely oval. Ventral plate with broad wrinkled base and narrow terminal portion. Scape with a genital socket at posterior apical part and a pair of genital openings on both sides (Fig. 7). **Measurements.** Male/female : Body length 2.60/3.00; carapace length 1.38/1.48, width 1.13/1.13; cephalic width 0.75/0.73; sternum length 0.61/0.72, width 0.59/0.72; labium length 0.12/0.12, width 0.22/0.27; anterior eye row 0.42/0.46; posterior eye row 0.46/0.49; AME-AME 0.03/0.03; AME-ALE 0.05/0.05; PME-PME 0.07/0.07; PME-PLA 0.07/0.07; ALE-PLA contiguous/contiguous; abdomen length 1.30/1.83, width 0.85/1.23.

Leg I 4.76/5.11 (1.40/1.45, 0.38/0.40, 1.33/1.38, 1.10/1.13, 0.55/0.75), II 4.59/4.68 (1.30/1.35, 0.38/0.40, 1.18/1.18, 1.03/1.05, 0.70/0.70), III 3.90/3.99 (1.10/1.18, 0.30/0.36, 0.95/0.95, 0.95/0.90, 0.60/0.60), IV 5.05/5.42 (1.33/1.58, 0.33/0.38, 1.43/1.48, 1.23/1.28, 0.73/0.70).

**Material examined.** 2 ♀♀, Jinbu-myeon, Pyeongchang-gun, Gangwon-do (37°44'13"N, 128°35'14"E, 673m), 9. ix. 2007, S.Y. Kim. 1 ♂, 1 ♀, same locality (37°43'58"N, 128°35'23"E, 679m), 24. ix. 2009, the same collector.

**Distribution.** Holarctic region, Korea (Gangwon-do; new record).

#### **Genus *Ryojius* Saito and Ono, 2001 오이접시거미속(신칭)**

*Ryojius* Saito and Ono, 2001: 53. Type species: *Ryojius japonicus* Saito and Ono, 2001: 54.

Chelicerae with 5 promarginal and 4-6 retromarginal teeth. Metatarsus IV without trichobothrium; Tm I 0.30-0.35. Tibial chaetotaxy 2-2-1-1. Epigynum usually with a scape. Male palpal organ with a developed membranous lamella. Tibia with a small apophysis curved retrolaterally (Saito and Ono, 2001).

#### ***Ryojius japonicus* Saito and Ono, 2001 오이접시거미(신칭) (Figs. 8-15)**

*Ryojius japonicus* Saito and Ono, 2001: 54; Ono et al., 2009: 318.

**Diagnosis.** This species is similar to other *Ryojius* species in general appearance, but easily distinguished by the scape of epigynum, the lamella of embolic division and paracymbium of palpal organ (Figs. 12-13, 15)

**Description.** Male : Carapace yellow. Cervical and radial groove indistinct, median furrow indistinct (Fig. 8). Cephalon elevated, with several bristles along the middle line. Clypeus height 4 times of diameter of AME. AER recurved and PER nearly straight in dorsal view (Fig. 9). Eye ratio, ALE = PLE > PME > AME (4 : 3 : 2.5). MOQ, height > posterior side > anterior side (10 : 9.5 : 6). Chelicerae with five promarginal and four retromarginal teeth. Sternum and labium yellow. Legs yellow. Leg I/c 2.51. Fem. I/c 0.73 Tib. I/c 0.63. Met. I/c 0.46. Met. I/tar. I 1.06. Met. IV/tar. IV 1.27. Tibial chaetotaxy 2-2-1-1. Tm I 0.35. II 0.33, III 0.64 and IV absent. Abdomen oval and dark gray. Palpal tibia with a apophysis curved retrolaterally. Paracymbium with a retrolateral ridge and a

prolateral node at ventral branch, and with a sharp blade at inside of ventral branch. Embolic division with a narrow membranous lamella (Figs. 12-14).

Female : General appearance is similar to male (Fig. 10-11). Eye ratio, ALE = PLE > PME > AME (4.5 : 4 : 3). MOQ, posterior side > height > anterior side (11.5 : 10 : 7). Leg I/c 2.36. Fem. I/c 0.70. Tib. I/c 0.54. Met. I/c 0.43. Met. I/tar. I 1.03. Met. IV/tar. IV 1.16. Tm I 0.36. II 0.37, III 0.35 and IV absent. Ventral plate of epigynum wider than long, scape with a genital socket and a pair of genital openings (Fig. 15).

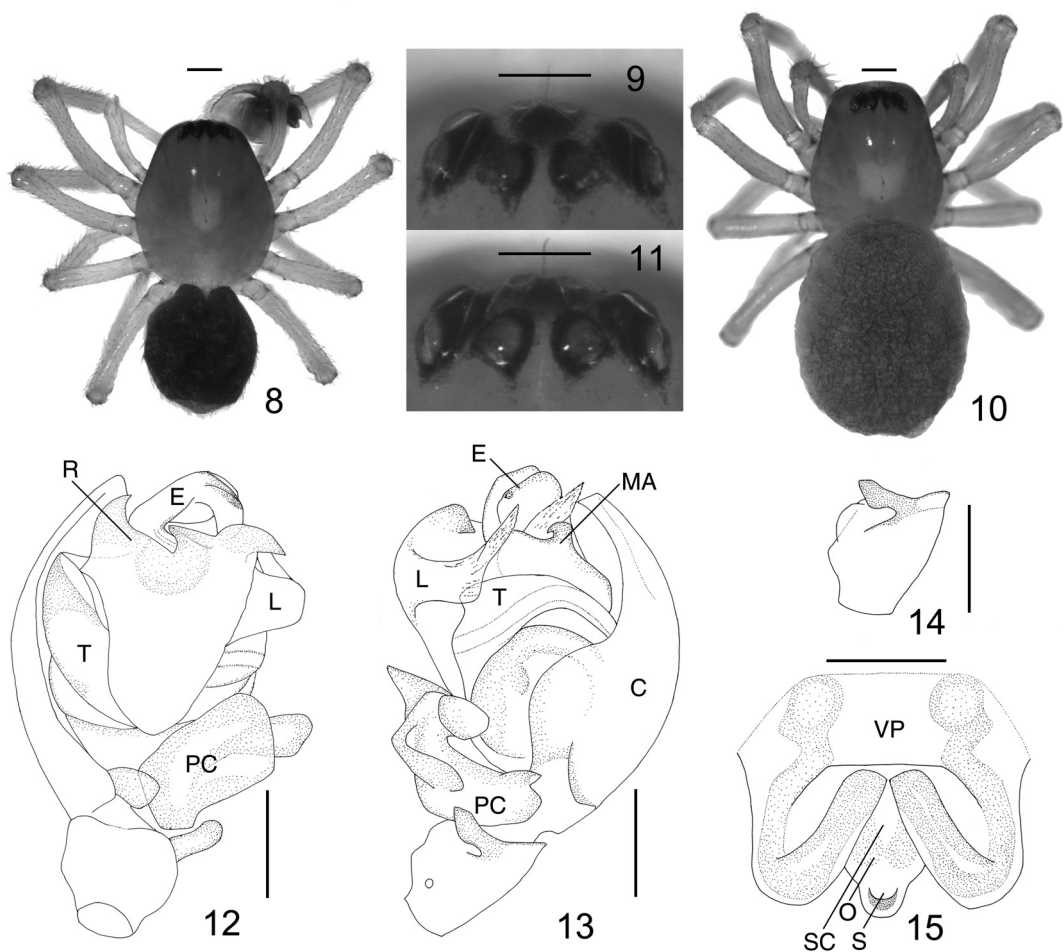
**Measurements.** Male/female : Body length 1.44/1.70; carapace length 0.82/0.84, width 0.68/0.64; cephalic width 0.56/0.54; sternum length 0.39/0.46, width 0.43/0.43; labium width 0.17/0.16; anterior eye row 0.25/0.25; posterior eye row 0.27/0.28; AME-AME 0.01/0.01; AME-ALE 0.03/0.03; PME-PME 0.05/0.05; PME-PLA 0.05/0.04; ALE-PLA contiguous/contiguous; abdomen length 0.64/1.10, width 0.56/0.86. Leg I 2.06/1.98 (0.60/0.59, 0.20/0.23, 0.52/0.45, 0.38/0.36, 0.36/0.35), II 1.82/1.81 (0.52/0.54, 0.20/0.22, 0.44/0.39, 0.34/0.34, 0.32/0.32), III 1.52/1.54 (0.44/0.45, 0.18/0.20, 0.32/0.32, 0.30/0.29, 0.28/0.28), IV 1.92/1.99 (0.56/0.60, 0.20/0.21, 0.48/0.49, 0.38/0.37, 0.30/0.32).

**Material examined.** 1 ♂, Beopjeon-ri Gacheon-myeon, Seongju-gun, Gyeongsangbuk-do (35°50'45"N, 128°07'48"E), 25. v. 2007, J.Y. Park. 2 ♀♀, Jeongsan-ri Yean-myeon, Andong-si, Gyeongsangbuk-do (36°46'15"N, 128°57'09"E, 473 m), 23. vii. 2010, S.Y. Kim. 1 ♀, Ogi-ri Subi-myeon, Yeongyang-gun, Gyeongsangbuk-do (36°45'16"N, 129°12'23"E, 436m), 24. vii. 2010, S.Y. Kim.

**Distribution.** Korea (Gyeongsangbuk-do; new record), Japan (Honshu and Kyushu).

#### **Genus *Sachaliphantes* Saaristo and Tanasevitch, 2004 극동접시 거미속(신칭)**

*Sachaliphantes* Saaristo and Tanasevitch, 2004: 124. Type species: *Lepthyphantes sachalinensis* Tanasevitch, 1988: 338. Chelicerae with three teeth on both margins of fang furrows. Metatarsus IV without trichobothrium; Tm I 0.18-0.21. Tibial chaetotaxy 2-2-2-2. Epigynum with a small scape. Male palpal organ with a broad paracymbium and a conspicuously large radix.



**Figs. 8-15.** *Ryojius japonicus* Saito and Ono, 2001: 8. male, dorsal view; 9. male eye area, dorsal view; 10. female, dorsal view; 11. female eye area, dorsal view; 12. male left palp, prolateral view; 13. ditto, retrolateral view; 14. ditto, tibial apophysis; 15. female epigynum. Abbreviations: C, cymbium; E, embolus; L, lamella; MA, median apophysis; O, genital opening; PC, paracymbium; S, genital socket; SC, scape; T, tegulum; VP, ventral plate. Scale lines: 0.1 mm (8-15).

***Sachaliphantes sachalinensis* (Tanasevitch, 1988) 극동접시거미(신칭) (Figs. 16-23)**

*Lepthyphantes sachalinensis* Tanasevitch, 1988: 338; Tao et al., 1995: 250; Song et al., 1999: 182.

*Mughiphantes sachalinensis*: Saaristo and Tanasevitch, 2004: 124.

*Sachaliphantes sachalinensis*: Tanasevitch, 2008: 128; Ono et al., 2009: 329.

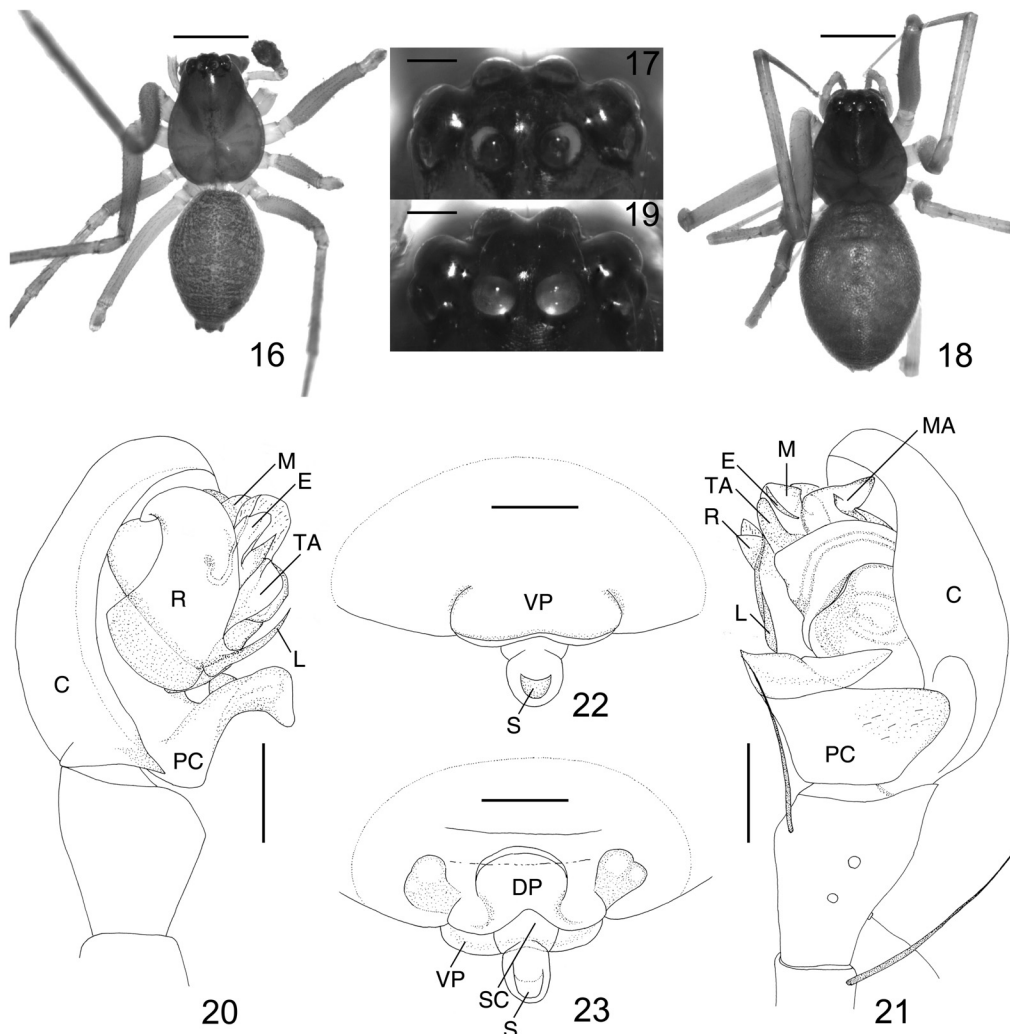
**Diagnosis.** This species is similar to *Mughiphantes* species in the general arrangement of genital organs, but easily distinguished by a broad paracymbium with a ridge at the frontal margin of ventral branch and a conspicuously large radix with a long pointed lamella (Fig. 20-21).

**Description.** Male : Carapace yellowish brown except for

cephalon. Cervical and radial groove indistinct, median furrow distinguishable. Cephalon reddish brown (Fig. 16). Clypeus height 1.7 times of diameter of AME. AER recurved and PER nearly straight in dorsal view (Fig. 17). Eye ratio, ALE = PLE = PME > AME (8 : 7). MOQ, height > posterior side > anterior side (19 : 21 : 18). Chelicerae with three teeth on both margins. Sternum and labium brown. Legs brown. Leg I/c 5.40. Fem. I/c 1.43 Tib. I/c 1.36. Met. I/c 1.46. Met. I/tar. I 1.67. Met. IV/tar. IV 1.87. Leg spination: Tibiae; I d1-1, p0-1, r0-1, v1-1; II d1-1, p0-1, r0-1, v0-1-0; III d1-1, p0-1, v0-1-0; IV d1-1, p1-1, r0-1, v1-1. Metatarsi; I-IV d1-0-0. Tibial chaetotaxy 2-2-2-2. Tm I 0.18. II 0.17, III 0.15 and IV absent. Abdomen oval and dark gray. Paracymbium broad, with a ridge at the frontal margin of ventral branch. Radix of embolic division conspicuously large,

with a long pointed lamella at base. Embolus and terminal apophysis membranous and weakly chitinized (Figs. 20-21). Female : General appearances are similar to male (Figs. 18-19). Clypeus height 1.9 times of diameter of AME. Eye ratio, ALE > PME > AME = PLE (9.5 : 8 : 7). MOQ, height > posterior side > anterior side (22 : 19 : 18). Leg I/c 4.58. Fem. I/c 1.24. Tib. I/c 1.12. Met. I/c 1.17. Met. I/tar. I 1.57. Met. IV/tar. IV 1.79. Leg spination: Femora; I p0-1-1-0. Tibiae; I d1-1; II d1-1, v0-1-1; III d1-1, p0-1, v0-1-0; IV d1-1, p0-0-1, r0-0-1, v0-1-0. Metatarsi; IV v0-1-0. Tm I 0.21. II 0.22, III 0.24 and absent. Epigynum with a wide dorsal plate, and short scape with a genital socket at tip and dorsal plate with depressed middle part (Figs. 22-23).

**Measurements.** Male/female : Body length 2.85/3.00; carapace length 1.40/1.45, width 1.05/1.03; cephalic width 0.70/0.75; sternum length 0.73/0.74, width 0.69/0.73; labium width 0.21/0.25; anterior eye row 0.48/0.48; posterior eye row 0.51/0.51; AME-AME 0.04/0.04; AME-ALE 0.04/0.04; PME-PME 0.06/0.06; PME-PLE 0.07/0.07; ALE-PLE contiguous/contiguous; abdomen length 1.40/1.90, width 1.00/1.30. Leg I 7.56/6.64 (2.00/1.80, 0.38/0.43, 1.90/1.63, 2.05/1.70, 1.23/1.08), II 6.23/5.79 (1.68/1.63, 0.35/0.41, 1.55/1.40, 1.65/1.45, 1.00/0.90), III 4.06/4.03 (1.23/1.20, 0.25/0.35, 0.90/0.88, 1.08/1.00, 0.60/0.60), IV 5.55/5.31 (1.60/1.53, 0.19/0.35, 1.38/1.25, 1.55/1.40, 0.83/0.78).



**Figs. 16-23.** *Sachaliphantes sachalinensis* (Tanasevitch, 1988): 16. male, dorsal view; 17. male eye area, dorsal view; 18. female, dorsal view; 19. female eye area, dorsal view; 20. male left palp, prolateral view; 21. ditto, retrolateral view; 22. female epigynum; 23. ditto, internal view. Abbreviations: C, cymbium; DP, dorsal plate; E, embolus; L, lamella; M, membrane; MA, median apophysis; PC, paracymbium; R, radix; S, genital socket; SC, scape; T, tegulum; TA, terminal apophysis; VP, ventral plate. Scale lines: 0.5 mm (16, 18), 0.1 mm (17, 19-23).

**Material examined.** 1♂, Jinbu-myeon, Pyeongchang-gun, Gangwon-do (37°43'53"N, 128°35'31"E, 663m), 9. ix. 2007, B.C. Uhm. 1♀, Buk-myeon, Inje-gun, Gangwon-do (38°07'04"N, 128°21'11"E, 535m), 22. ix. 2009, S.Y. Kim.

**Distribution.** China (Jilin), Korea (Gangwon-do; new record), Japan (Hokkaido), Russia (Sakhalin).

**Genus *Tmeticus* Menge, 1868 유럽애접시거미속(신칭)**

*Tmeticus* Menge, 1868: 184. Type species: *Neriene affinis* Blackwall, 1855: 121.

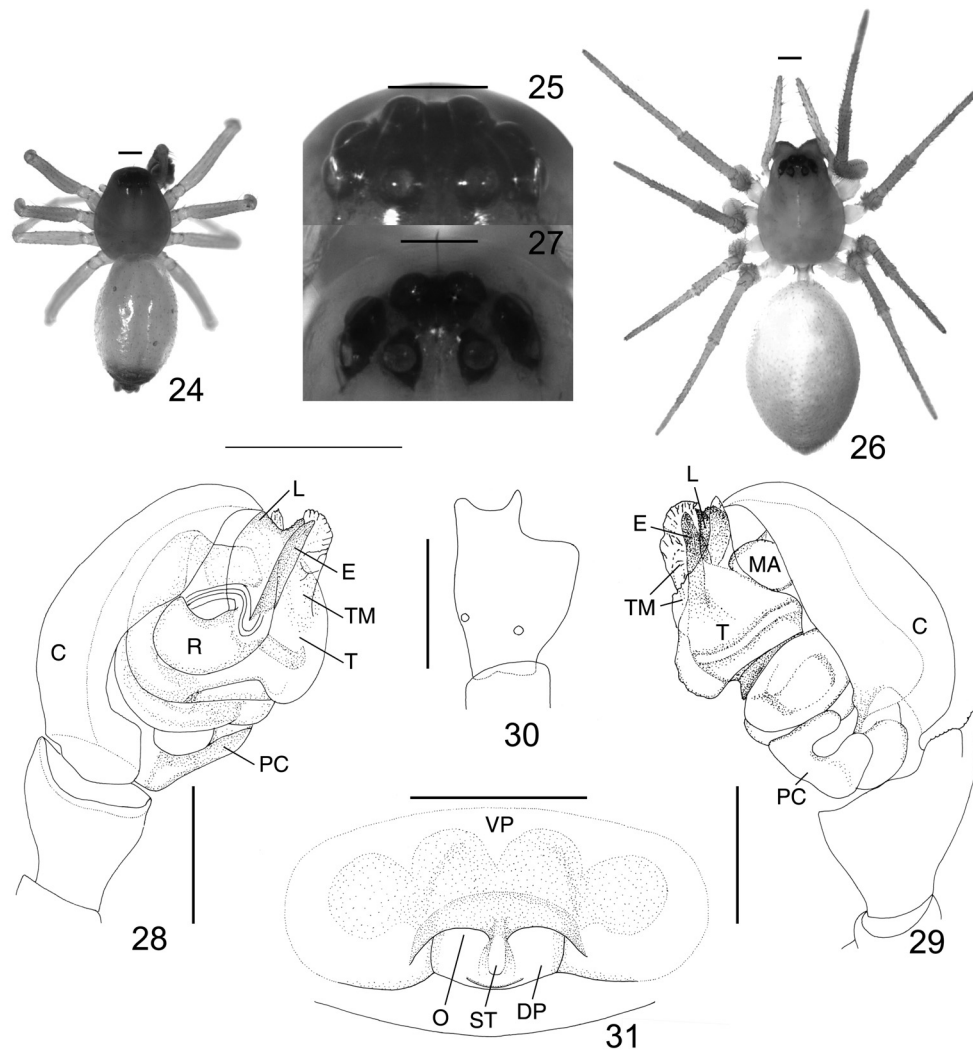
Cephalic lobe not present. Chelicerae with 5-6 promarginal and 3-5 retromarginal teeth. Metatarsus IV with trichobothrium; Tm

I 0.54-0.74. Tibiae I-II with two dorsal spines, tibiae III-IV with one dorsal spine. A pair of genital openings of epigynum usually divided by a median septum. Embolic division rounded at the base, narrowed apically.

***Tmeticus vulcanicus* Saito and Ono, 2001 화산애접시거미(신칭) (Figs. 24-31)**

*Tmeticus vulcanicus* Saito and Ono, 2001: 11; Ono et al., 2009: 304.

**Diagnosis.** This species is very similar to *Tmeticus nigerrimus* Saito and Ono, 2001, but easily distinguished by the shape of tibial apophysis, radix and embolus of embolic division and



**Figs. 24-31.** *Tmeticus vulcanicus* Saito and Ono, 2001 : 24. male, dorsal view; 25. male eye area, dorsal view; 26. female, dorsal view; 27. female eye area, dorsal view; 28. male left palp, prolateral view; 29. ditto, retrolateral view; 30. ditto, tibial apophysis, dorsal view; 31. female epigynum. Abbreviations: C, cymbium; DP, dorsal plate; E, embolus; L, lamella; MA, median apophysis; O, genital opening; PC, paracymbium; R, radix; ST, septum; T, tegulum; TM, tegular apophysis; VP, ventral plate. Scale lines: 0.1 mm (24-31).

median septum of epigynum (Figs. 28-31).

**Description.** Male : Carapace reddish brown. Cervical and radial groove indistinct, median furrow unclear (Fig. 24). Clypeus height 2.6 times of diameter of AME. AER recurved slightly and PER slightly procurved in dorsal view (Fig. 25). Eye ratio, AME = ALE = PLE > PME (3.5 : 3). MOQ, posterior side > height > anterior side (10.5 : 10 : 9). Chelicerae with 5 promarginal and 4 retromarginal teeth. Sternum and labium reddish brown. Legs brown. Leg I/c 3.28. Fem. I/c 0.92 Tib. I/c 0.80. Met. I/c 0.72. Met. I/tar. I 1.31. Met. IV/tar. IV 1.71. Tibial chaetotaxy 2-2-1-1. Tm I 0.50. II 0.53, III 0.43 and IV 0.51. Abdomen oval and pale yellow, but black posteriorly. Palpal tibia with a bifid dorsal apophysis. Basal part of radix of embolic division rounded, embolus straight and lamellar chitinized distally. Tegular membrane well developed broadly (Figs. 28-30).

Female : Carapace yellow. General appearances are similar to male (Figs. 26-27). Clypeus height 2.8 times of diameter of AME. All eyes same size. MOQ, posterior side > height > anterior side (12 : 11 : 10). Chelicerae with 6 promarginal and 5 retromarginal teeth. Leg I/c 3.39. Fem. I/c 0.98. Tib. I/c 0.83. Met. I/c 0.80. Met. I/tar. I 1.56. Met. IV/tar. IV 1.70. Tm I 0.55. II 0.54, III 0.51 and IV 0.55. Epigynum with a wide dorsal plate and a pair of genital openings divided by a median septum (Fig. 31).

**Measurements.** Male/female : Body length 1.50/2.20; carapace length 0.65/0.80, width 0.53/0.58; cephalic width 0.38/0.43; sternum length 0.39/0.46, width 0.39/0.46; labium length 0.08/0.09, width 0.12/0.14; anterior eye row 0.22/0.26; posterior eye row 0.23/0.29; AME-AME 0.03/0.02; AME-ALE 0.01/0.02; PME-PME 0.05/0.06; PME-PLA 0.04/0.04; ALE-PLA contiguous/contiguous; abdomen length 0.93/1.13, width 0.58/0.80. Leg I 2.13/2.71 (0.60/0.78, 0.18/0.22, 0.52/0.66, 0.47/0.64, 0.36/0.41), II 2.02/2.50 (0.57/0.72, 0.18/0.22, 0.47/0.60, 0.46/0.58, 0.34/0.38), III 1.66/2.04 (0.47/0.58, 0.16/0.20, 0.35/0.44, 0.39/0.50, 0.29/0.32), IV 2.14/2.77 (0.60/0.80, 0.18/0.21, 0.52/0.68, 0.53/0.68, 0.31/0.40).

**Material examined.** 3♂♂, 1♀, Heuksan-myeon, Sinan-gun, Jeollanam-do (34°40'15"N, 125°21'57"E, 136m), 26. vii. 2007, B.K. Choi.

**Distribution.** Korea (Jeollanam-do; new record), Japan (Miyakejima and Kanagawa).

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