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Two newly recorded genera *Gongylidioides* Oi, 1960 and *Mermessus* O.P.-Cambridge, 1899 with descriptions of *Gongylidioides kaihotsui* Saito and Ono, 2001 and *Mermessus naniwaensis* (Oi, 1960) (Araneae: Linyphiidae) from Korea

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Gongylidioides kaihotsui Saito and Ono, 2001 and *Mermessus naniwaensis* (Oi, 1960) of Linyphiidae are described from Korea with taxonomic illustrations. The genera *Gongylidioides* Oi, 1960 and *Mermessus* O.P.-Cambridge, 1899 are newly recorded genera to Korean spider fauna.

Keywords: Araneae, description, *Gongylidioides kaihotsui*, Korea, Linyphiidae, *Mermessus naniwaensis*

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Introduction

Gongylidioides kaihotsui Saito and Ono, 2001 and *Mermessus naniwaensis* (Oi, 1960) of Linyphiidae are newly described to Korean spider fauna. So far, *G. kaihotsui* is only known in Japan and *M. naniwaensis* is distributed in China and Japan. Specimens were collected by pitfall traps around streamside and soil surface, respectively. *Gongylidioides kaihotsui* may be rare in Korea because only single male specimen was collected during the survey period in agricultural landscape in 2001-2006. On the other hand, *M. naniwaensis* shows relatively wide distribution in Korea, though fewer individuals were found. Forty six Korean genera of Linyphiidae have been recorded to date (Namkung *et al*., 2009; Seo, 2011). Two genera *Gongylidioides* Oi, 1960 and *Mermessus* O.P.-Cambridge, 1899 are also newly recorded genera to Korean spider fauna.

Material and Methods

The external morphology of *Gongylidioides kaihotsui* and *Mermessus naniwaensis* were examined and the taxonomic characters of each species were illustrated using a stereoscopic dissecting microscope (NIKON SMZ 745T). Measurements of each part of body were made with an ocular micrometer and are recorded in millimeters. Leg measurements are given as "leg number, total length (femur, patella + tibia, metatarsus, and tarsus)." Palp measurements are listed as "total length (femur, patella + tibia, and tarsus)." The following abbreviations are used in the description: d, dorsal surface and v, ventral surface in leg spiniformation. Specimens examined in this study are lodged in the collection of National Institute of Biological Resources (NIBR), Incheon, Korea.

Systematic Accounts

Order Araneae Clerck, 1757
Family Linyphiidae Blackwall, 1859

Genus *Gongylidioides* Oi, 1960
지느러미접시거미속(신칭)

Carapace of male with one hood-like lobe, no cephalic pits and sulci, but female without lobe. Anterior eye row slightly recurved and posterior eye row almost straight. Chelicerae with 5 promarginal teeth. Sternum heart-shaped with a broad straight anterior margin, longer than wide. Legs with 2 dorsal spines on Tibiae I and II, one spine on tibiae III and IV, metatarsus IV with a trichobothrium. Abdomen with dorsal black marking. Male palp

with a rather long patella with small wart at the ventral end; tibia with 3 apophyses (dorsolateral apophysis broad and long with a pointed tip, dorsomesial and ventral apophyses smaller); paracymbium with a hook-shaped end and several long bristles; embolus lamelliform. Female epigyne with a median scape over the copulatory pore (Oi, 1960).

***Gongylidioides kaihotsui* Saito and Ono, 2001**
머리털지느러미접시거미(신칭) (Fig. 1A-E)

Gongylidioides kaihotsui Saito and Ono, 2001: 22, f. 44-47; Ono, Matsuda and Saito, 2009: 296, f. 520-523.

Measurements (in mm). Body length 2.07; Carapace 1.07 long, 0.84 wide; Anterior eye row 0.26, posterior eye row 0.33; Chelicera 0.28 long, 0.20 wide; Endite 0.34 long, 0.21 wide; Labium 0.06 long, 0.14 wide; Sternum 0.57 long, 0.46 wide; Legs I 3.01 (0.95, 1.02, 0.59, 0.45), II 2.75 (0.84, 0.89, 0.55, 0.47), III 2.15 (0.57, 0.76, 0.48, 0.35), IV 2.78 (0.92, 0.96, 0.49, 0.41); Palp 1.12 (0.53, 0.43, 0.17).
Description. Male: Carapace ovoid, yellowish brown, longer than wide; head region thicker than thoracic region (Fig. 1A); head region with sparse bristles gently elevated (Fig. 1B). Eight eyes arranged in 2 rows; anterior eye row slightly recurved, posterior eye row almost straight from the above (Fig. 1C); eye region infuscate (Fig. 1A, B); all eyes encircled with black. Cervical furrow and radial furrow distinct, thicker than ground color, fovea dark reddiish brown and needle-shaped (Fig. 1A). Chelicerae dark blackish brown without stridulating files; 6 promarginal teeth and 5 retromarginal teeth. Endite yellowish brown. Labium blackish brown. Sternum dusky and light yellowish brown, shield-shaped with truncated anterior end, convex, longer than wide; protruded between hind coxae (Fig 1D). Legs yellowish brown, robust and well developed; covered densely with dark blackish brown hairs (Fig. 1A). Abdomen ovoid, dusky grayish brown, longer than wide; median band and margin of anterior half lighter; a pair of black-mottled patches (Fig. 1A). Spinnerets dull grayish brown. Palpal tibia robust; embolus short and pointed; paracymbium with a hook-shaped end; dorsal tibial apophysis broad and fin-shaped from the dorsal and retrolateral view; lamella characteristically thick; protegulum large (Fig. 1E-G).

Material examined. 1 male, 23-VI-2004, Singilcheon, Danweon-gu, Ansan-si, Gyeonggi-do (ST Kim and SY Lee leg.).
Distribution. Korea (new record), Japan.
Remarks. This species was collected with pitfall traps around streamside.

Genus *Mermessus* O.P.-Cambridge, 1899
넓은가슴접시거미속(신칭)

Carapace longer than wide. Posterior margin of sternum tapered with coxae IV separated by about their width or less. Chelicerae with or without frontal spur, setal bases along lateral margin of chelicerae sometimes enlarged and tooth-like. Pedicel with sternite and lateral plates separated. Tracheae desmitracheate, without taenidia in tracheoles. Cymbium extends beyond alveolus, without groove along retrolateral margin of proximal part. Male palp with a robust and spiral paracymbium; subtegulum proximal to tegulum; fundus nearly perpendicular to axis of palpal bulb; protegulum present; radix with retrolateral excavation; tailpiece recurved ventrally; mesal tooth present or absent, anterior tooth usually present; embolic membrane present; embolus short. Female epigyne sometimes moderately elongate; ventral plate usually with median invagination along posterior margin; copulatory ducts expand to form atrium shortly after leaving spermathecae (Miller, 2007).

***Mermessus naniwaensis* (Oi, 1960)**
넓은가슴접시거미(신칭) (Fig. 2A-G)

Erigonidium naniwaensis Oi, 1960: 145, f. 26-30.
Eperigone naniwaensis Oi, 1964: 23; Zhu and Sha, 1992: 43, f. 9-14; Song, Zhu and Chen, 1999: 167, f. 93F, G, J, K.
Erigonidium naniwaense Brignoli, 1983: 337; Chikuni, 1989: 56, f. 47.
Mermessus naniwaensis Ono, Matsuda and Saito, 2009: 290, f. 465-469.

Measurements (in mm from Changnyeong specimen). Body length 2.90; Carapace 1.64 long, 1.19 wide; Anterior eye row 0.45, posterior eye row 0.50; Chelicera 0.91 long, 0.39 wide; Endite 0.50 long, 0.38 wide; Labium 0.17 long, 0.21 wide; Sternum 0.86 long, 0.85 wide; Legs I 4.85 (1.33, 1.63, 1.23, 0.68), II 4.44 (1.25, 1.43, 1.14, 0.63), III 3.65 (1.06, 1.13, 0.96, 0.50), IV 4.86 (1.38, 1.65, 1.20, 0.64); Palp 2.19 (0.90, 0.71, 0.58).
Description. Male: Carapace ovoid, dark yellowish brown, longer than wide; head region dark, gently elevated (Fig. 1A). Eight eyes arranged in 2 rows; anterior eye row slightly recurved, posterior eye row almost straight from the above; anterior median eyes slightly smaller than the others; both lateral eyes contiguous from the above (Fig. 2B). Cervical furrow and radial furrow distinct, fovea blackish brown and needle-shaped (Fig. 2A). Chelicerae pale blackish brown with 5 promarginal teeth and 3 retromarginal teeth; mesial surface with strongly pointed boss; 6 large and small warts in rows anteriolaterally, decreased in size from upper to base;

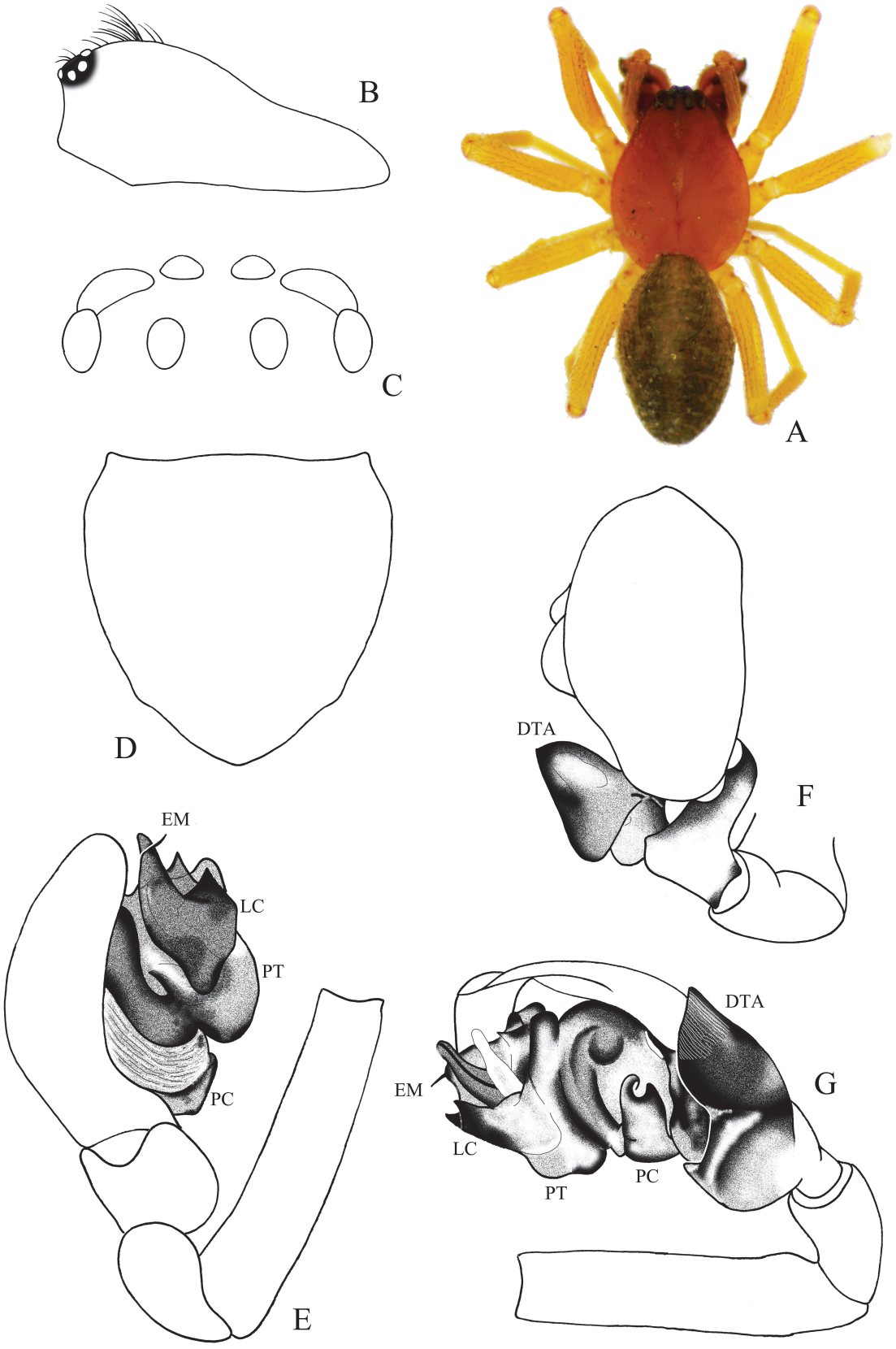

Fig. 1. *Gongylidioides kaihotsui* (A. body; B. cephalothorax, lateral view; C. eye region; D. sternum; E. palp, prolateral view; F. ditto, dorsal view; G. ditto, retrolateral view; DTA dorsal tibial apophysis, EM embolus, LC lamella characteristic, PC paracymbium, PT protegulum).

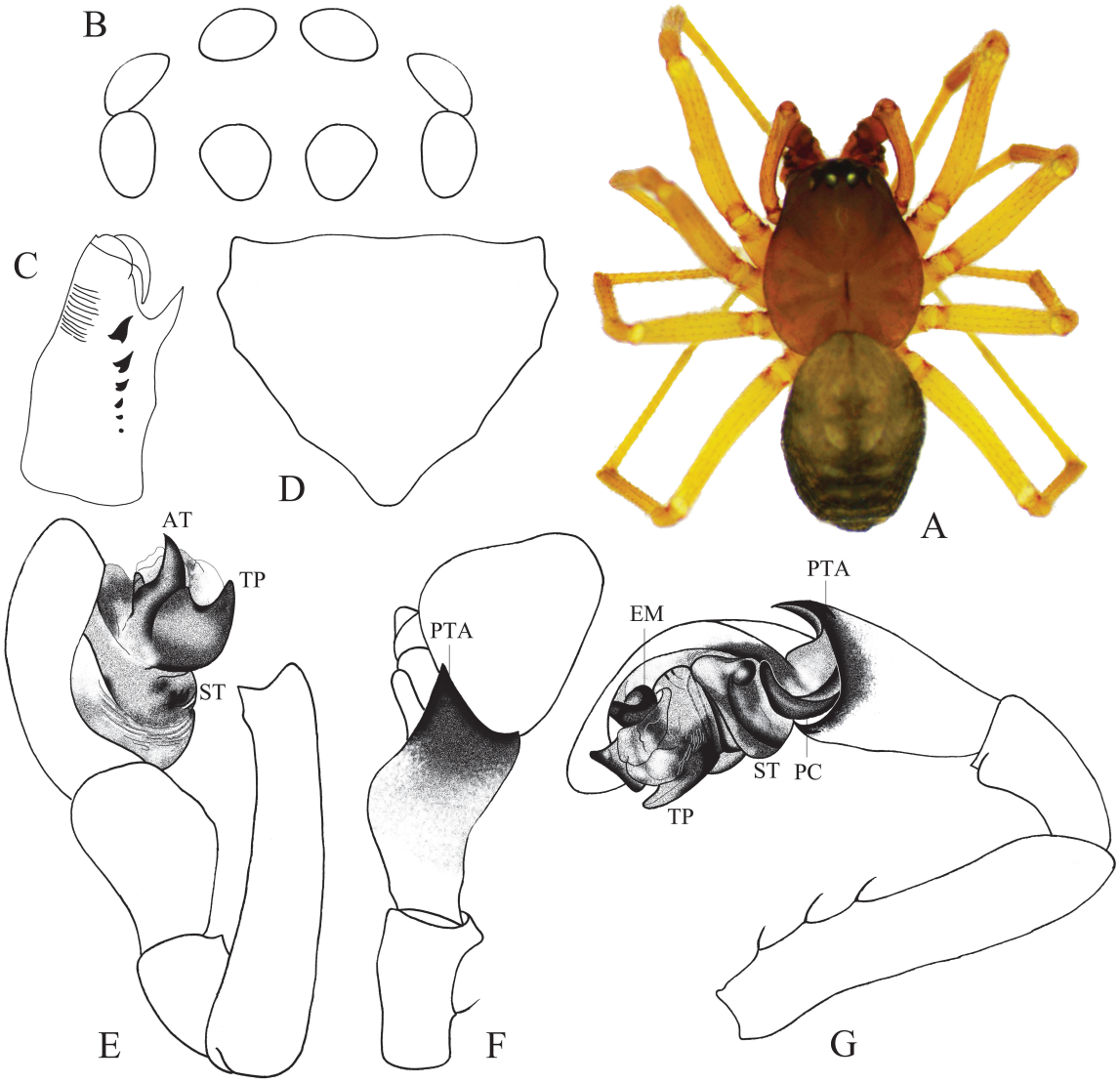

Fig. 2. *Mermessus naniwaensis* (A. body; B. eye region; C. chelicera, dorsolateral view; D. sternum; E. palp, prolateral view; F. ditto, dorsal view; G. ditto, retrolateral view; AT anterior tooth of radix, EM embolus, PC paracymbium, PTA prolateral tibial apophysis, ST subtegulum, TP tailpiece of radix).

dorsum with stridulating files (Fig. 2C). Endite light blackish brown, rectangle-shaped, slant interiorly; margin enclosed with dark blackish brown line. Labium dark yellowish brown; anterior part thick blackish brown. Sternum blackish brown, convex, heart-shaped with truncated anterior part, as long as wide; broadly protrude between the hind coxae; covered sparsely with long bristles; mottled with thick blackish brown marginally (Fig. 2D). Legs yellowish brown, long and strongly developed; tibiae of I-III with 2 dorsal spines, tibia IV with 1 dorsal spine; covered densely with short blackish brown hairs; no particular pattern; leg formula 4≒123 (Fig. 2A). Abdomen ovoid, dusky yellowish brown, longer than wide; posterior part dark blackish brown with 5-6 transverse lines, wrinkled (Fig. 2A). Spinnerets dull grayish brown. Palp yellowish brown; tibia geniculate with a pointed large prolateral tibial apophysis; embolus thick and curved at the upper part of tegulum; paracymbium curved; tailpiece of radix distinct, anterior tooth of radix thick and pointed; subtegulum apophysis large (Fig. 2E-G).

Material examined. 1 male, 17-IX-2000, Paltan-myeon, Hwaseong-si, Gyeonggi-do (ST Kim leg.), 1 male, 25-VII-2008, Jucheon-myeon, Namweon-si, Jeollabuk-do (ST Kim and SY Lee leg.); 2 males, 19-VII-2012, Gyeseong-myeon, Changnyeong-gun, Gyeongsangnam-do (ST Kim and SY Lee leg.).

Distribution. Korea (new record), China, Japan.

Remarks. This species was collected with pitfall traps

on the soil surface in low vegetation.

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References

Brignoli, P.M. 1983. A catalogue of the Araneae described between 1940 and 1981. Manchester University Press, 755 pp.

Chikuni, Y. 1989. Pictorial Encyclopedia of Spiders in Japan. Kaisei-sha Publishing Co., Tokyo, 310 pp.

Miller, J.A. 2007. Review of erigonine spider genera in the Neotropics (Araneae: Linyphiidae, Erigoninae). Zoological Journal of the Linnean Society 149(Suppl. 1): 1-263.

Namkung, J., J.S. Yoo, S.Y. Lee, J.H. Lee, W.K. Paek and S.T. Kim. 2009. Bibliographic Check list of Korean Spiders (Arachnida: Araneae) ver. 2010. Korean Nature 2: 191-285.

Oi, R. 1960. Linyphiid spiders of Japan. Journal of the Institute of Polytechnics Osaka City University 11(D): 137-244.

Oi, R. 1964. A supplementary note on linyphiid spiders of Japan. Journal of Biology, Osaka City University (D) 15: 23-30.

Ono, H., M. Matsuda and H. Saito. 2009. Linyphiidae, Pimoidae. In: Ono, H. (ed.) The Spiders of Japan with keys to the families and genera and illustrations of the species. Tokai University Press, Kanagawa, pp. 253-344.

Pickard-Cambridge, O. 1899. Arachnida. Araneida. In: Biologia Centrali-Americana, Zoology. London 1: 289-304.

Saito, H. and H. Ono. 2001. New genera and species of the spider family Linyphiidae (Arachnida, Araneae) from Japan. Bulletin of the National Museum of Nature and Science Tokyo (A) 27: 1-59.

Seo, B.K. 2011. Description of a new species and four new records of the spider subfamily Erigoninae (Araneae: Linyphiidae) from Korea. Korean Journal of Applied Entomology 50: 141-149.

Song, D.X., M.S. Zhu and J. Chen. 1999. The Spiders of China. Hebei University of Science and Techology Publishing House, Shijiazhuang, 640 pp.

Zhu, C.D. and Y.H. Sha. 1992. Two species of linyphiid spiders from south China (Arachnida: Araneae). Journal of Norman Bethune University of Medical Sciences 18: 42-44.

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