



A survey on poorly known rainforest litter-dwelling spiders of Orchid Island (Lanyu, Taiwan) with the description of a new species (Araneae: Linyphiidae, Tetrablemmidae, and Theridiosomatidae)

FRANCESCO BALLARIN^{1*}, TAKESHI YAMASAKI^{1,2} & YONG-CHAO SU³

¹*Systematic Zoology Laboratory, Department of Biological Sciences, Tokyo Metropolitan University, 1-1 Minami-Osawa, Hachioji-shi, 192-0397, Tokyo, Japan.*

²*Institute of Nature and Environmental Sciences, University of Hyogo/Museum of Nature and Human Activities, Hyogo, Yayoigaoka 6, Sanda-shi, 669-1546, Hyogo, Japan.*

• <https://orcid.org/0000-0002-2419-188X>

³*Department of Biomedical Science and Environment Biology, Graduate Institute of Medicine, Kaohsiung Medical University, Kaohsiung City, Taiwan.*

• <https://orcid.org/0000-0002-5296-7227>

*Corresponding author. ✉ ballarin.francesco@gmail.com; • <https://orcid.org/0000-0003-1417-2519>

Abstract

Representatives of some poorly known spider species collected in the rainforest litter of the Orchid Island (Taiwan) are illustrated and discussed here. A new species, *Brignoliella tao* **sp. nov.** (Fam. Tetrablemmidae), endemic to Orchid Island, is described based on both sexes. The previously unknown female of *Theridiosoma triumphale* Zhao & Li, 2012 (Fam. Theridiosomatidae), is described for the first time. *Zoma taiwanica* (Zhang, Zhu & Tso 2006) **comb. nov.**, from the same family, is illustrated and its transfer from the genus *Theridiosoma* O. Pickard-Cambridge, 1879 to *Zoma* Saaristo, 1996 is proposed on the basis of morphological characters. Habitus and genitalia of the endemic species *Gongylidioides angustus* Tu & Li, 2006 (Fam. Linyphiidae) are also illustrated.

Key words: Island spiders, new combination, taxonomy, tropical forest, volcanic island

Introduction

Orchid Island, also known as Lanyu, is a small volcanic island located approximately 90 km off the South Eastern corner of Taiwan. In addition to Taiwanese fauna, Orchid Island harbors a rich diversity of species from the Philippines (Hsu & Wolf 2009, Kano 1933). Several surveys have been conducted to study the local spider fauna recording more than 120 species belonging to 19 families (Chen & Tso 2004, Yoshida *et al.* 2000). However, so far little attention has been paid to the litter-dwelling spiders.

During a June 2019 field trip to Orchid Island, the authors collected poorly-known species of rainforest litter-dwelling spiders, including one undescribed. The aim of this manuscript is to provide a detailed description of the new species, and complete and illustrate the description of some of the remaining species.

Material and methods

Specimens were collected by litter-sieving and preserved in 95% alcohol for morphological and molecular analysis. Specimens were examined and measured under a Nikon SMZ1270 stereomicroscope, and photographed using an attached Canon EOS Kiss x8i digital camera. Genitalia were photographed using the same camera mounted on a Nikon Optiphot 2 stereomicroscope. Photos taken with different focal points were merged using the image stacking software Helicon Focus 6.7.1, and further processed with Adobe Photoshop CC 2015. The left palp of each male specimen is illustrated. Female genitalia were dissected using a sharp scalpel, and macerated in a 20% KOH solution

to highlight the internal structures. Leg measurements are reported as following: (total length) femur, patella, tibia, metatarsus, and tarsus. All measurements are in millimeters. Types and other examined specimens are deposited in the collections of the National Museum of Natural Science, Taichung, Taiwan (NMNS), the Museo Civico di Storia Naturale of Verona, Italy (MSNV), the National Museum of Nature and Science, Tokyo, Japan (NSMT), and in the private collection of the first author (FBPC). Other material examined is preserved at the Institute of Zoology, University of the Chinese Academy of Sciences, China (IZCAS).

Taxonomy

Fam. Tetrablemmidae O. Pickard-Cambridge, 1873

Gen. *Brignoliella* Shear, 1978

Brignoliella tao Ballarin & Yamasaki sp. nov.

Figs. 1A–H, 2A–C.

Type material. Holotype ♂: TAIWAN: Taitung County, Orchid Island (Lanyu), Hongtou neighborhood, elev. 270 m a.s.l., (22°00'59.1"N, 121°34'20.5"E), rainforest litter, 13.JUNE.2019, Ballarin F. leg. (NMNS-8309-001).

Paratypes: TAIWAN: 8♂♂, 18♀♀, same locality and date as the holotype, (NMNS-8309-002); 3♂♂, 4♀♀, along the trail to Datianchi lake (大天池), elev. 106 m a.s.l., (22°00'46.2"N, 121°34'13.9"E), rainforest litter, 13.JUNE.2019, (MSNV, MSNVRAr006–012); 2♂♂, 13♀♀, Hongtou forest, walking trail under a bridge, Elev. 68 m a.s.l., (22°00'34.8"N, 121°34'26.1"E), rainforest litter, 17.JUNE.2019, (NSMT-Ar 20876, Ar 20877). All Ballarin F. leg.

Other material examined. TAIWAN: 2♀♀, Taitung County, Orchid Island (Lanyu), Langdao neighborhood, near the Lanyu lighthouse, elev. 200 m a.s.l., (22°04'53.2"N, 121°30'17.7"E), rainforest litter, 17.JUNE.2019, (NMNS); 2♂, 3♀♀, near the Xiaotianchi Lake (小天池), elev. 160 m a.s.l., (22°04'39.7"N 121°30'35.8"E), rainforest litter, 17.JUNE.2019, (NSMT); 11♂♂, 11♀♀, Dongqing neighborhood, elev. 50 m a.s.l., (22°01'42.5"N, 121°34'36.4"E), rainforest litter, 14.JUNE.2019, (FBPC); 5♂♂, 3♀♀, same locality, elev. 40 m a.s.l., (22°01'47.6"N, 121°34'30.3"E), rainforest litter, 15.JUNE.2019, (NMNS). All Ballarin F. leg.

Etymology. The specific name refers to the Tao people, an ethnic group native of Orchid Island. Noun in apposition.

Diagnosis. Males of the new species can be easily distinguished from congeners by the shape of the two clypeal horns which are well-separated, short, rectangular, and ending with a blunt tip. In contrast, males of all other congeners have a different number of horns (e.g. *B. delphina* Deeleman-Reinhold, 1980, *B. ratnapura* Shear, 1988, *B. trifida* Lehtinen, 1981) or longer (e.g. *B. dankobiensis* Bourne, 1980), more pointed (e.g. *B. acuminata* (Simon, 1889), *B. besuchetiana* Bourne, 1980, *B. bicornis* (Simon, 1893), *B. carmen* Lehtinen, 1981, *B. massai* Lehtinen, 1981, *B. maros* Lehtinen, 1981), and sometimes partially-fused horns ending with a sharp tip (e.g. *B. besutensis* Lin, Li & Jäger, 2012, *B. caligiformis* Tong & Li, 2008, *B. maoganensis* Tong & Li, 2008, *B. martensi* (Brignoli, 1972), *B. michaeli* Lehtinen, 1981, *B. patmae* Fardiansah & Dupérré, 2019, *B. vulgaris* Lehtinen, 1981). Males of *B. tao* sp. nov. can be further separated from males of the similar *B. carmen* from Philippine and *B. maros* from Indonesia by the different shape of the embolus, larger and weaved rather than strait in *B. carmen* or much shorter and thinner in *B. maros* (see Fig 1A, B vs. figs. 113, 116 in Lehtinen, 1981). In addition, males of the new species can be further distinguished from males of other Chinese species (*B. maoganensis* and *B. caligiformis*) by the oblong, dorso-ventrally flattened bulb of the palp in *B. tao* sp. nov., in contrast with a pear-shaped bulb as in the other Chinese species (see Fig. 1A, B vs. fig. 2F, G and fig. 3F, G in Tong & Li 2008). Female *B. tao* sp. nov. can be distinguished from female *B. caligiformis*, *B. carmen*, *B. maoganensis*, and *B. maros* by the rounder seminal receptacula, and especially by the position of anterolateral grooves of the preanal plate, close to each other near the center of the plate in the new species in contrast with more separate grooves at the sides of the plate in the latter species (see Fig. 2A, C, vs. figs. 2E, 3E in Tong & Li 2008 and figs. 121, 125 in Lehtinen, 1981).

Description. Male. (holotype). Measurements: total length: 1.55 carapace: 0.78 long, 0.61 wide.

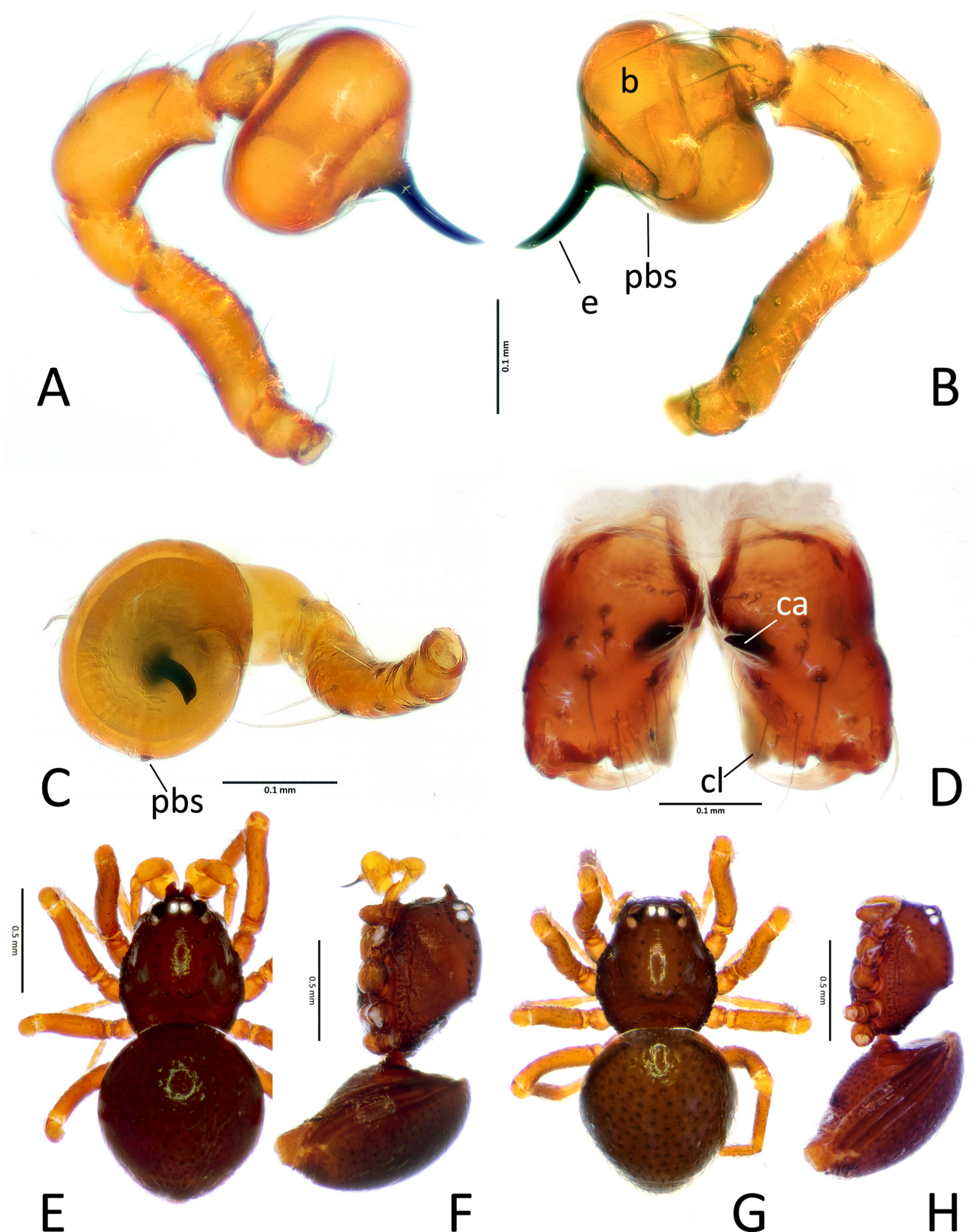


FIGURE 1. *Brignoliella tao* sp. nov.: A. male palp, prolateral view; B. ditto, retrolateral view; C. ditto, ventral view; D. male chelicerae, frontal view; E. male habitus, dorsal view; F. ditto, lateral view; G. female habitus, dorsal view; H. ditto, lateral view. Abbreviations: b = palpal bulb; ca = cheliceral apophysis; cl = cheliceral lamina; e = embolus; pbs = palpal bulb seta.

Habitus as in Fig. 1E, F. Carapace uniformly dark reddish-brown, strongly sclerotized with a rugose and indented margin. Cephalic area strongly elevated, with a ring of nodular bumps starting from the ocular area and surrounding the margin of the raised part. Six eyes well-developed and all of the same size. Clypeal horns rectangular and stumpy with a trapezoidal shape when observed dorsally, ending with a squared tip. Chelicerae as in Fig. 1 H, dark reddish-brown, bearing a well-developed front-mesial cheliceral apophysis, long and sharp, headed inward. Cheliceral lamina well-developed. Labium subtriangular, sternum with several bumps both colored as the carapace. Legs uniformly yellowish-brown. Leg measurements: I: (1.42) 0.47, 0.14, 0.35, 0.25, 0.21; II: (1.37) 0.44, 0.15, 0.31, 0.23, 0.24; III: (1.19) 0.34, 0.14, 0.26, 0.22, 0.23; IV: (1.51) 0.46, 0.14, 0.35, 0.29, 0.27. Opisthosoma uniformly dark reddish-brown. Dorsal and pulmonary scuta of opisthosoma with several sparse, small pits. Post-genital scutum present, often partially covered by other ventral scuta. Preanal and anal scuta rectangular and smooth, uniformly reddish, lighter-colored than other ventral scuta. Spinnerets reddish-brown.

Palp as in Fig. 1A–C. Femur bearing several spine pits ventrally, tibia bent, cymbium short and triangular-shaped when seen laterally. Bulb oblong and compressed dorso-ventrally, bearing a seta in the posterior-ventral side. Spermatic duct with a simple course; embolus strongly sclerotized, long and lightly curved, ending with a sharp tip.

Female (one of the paratypes). Measurements: total length: 1.45; carapace: 0.70 long, 0.58 wide.

Habitus as in Fig. 1G, H. General coloration, and shape of prosoma and opisthosoma as in the male. Prosoma lacking clypeal horns. Leg measurements: I: (1.38) 0.45, 0.12, 0.34, 0.23, 0.24; II: (1.13) 0.35, 0.10, 0.26, 0.23, 0.19; III: (1.26) 0.38, 0.13, 0.30, 0.22, 0.23; IV: (1.49) 0.45, 0.14, 0.37, 0.29, 0.24.

Genitalia as in Fig. 2A–C. Epigynal fold distinct, anterolateral grooves easily visible, close to each other in the central part of the preanal scutum. Vulval stem sclerotized. Vulval ducts starting at the side of the vulval stem, straight and connecting to translucent, round seminal receptacula.

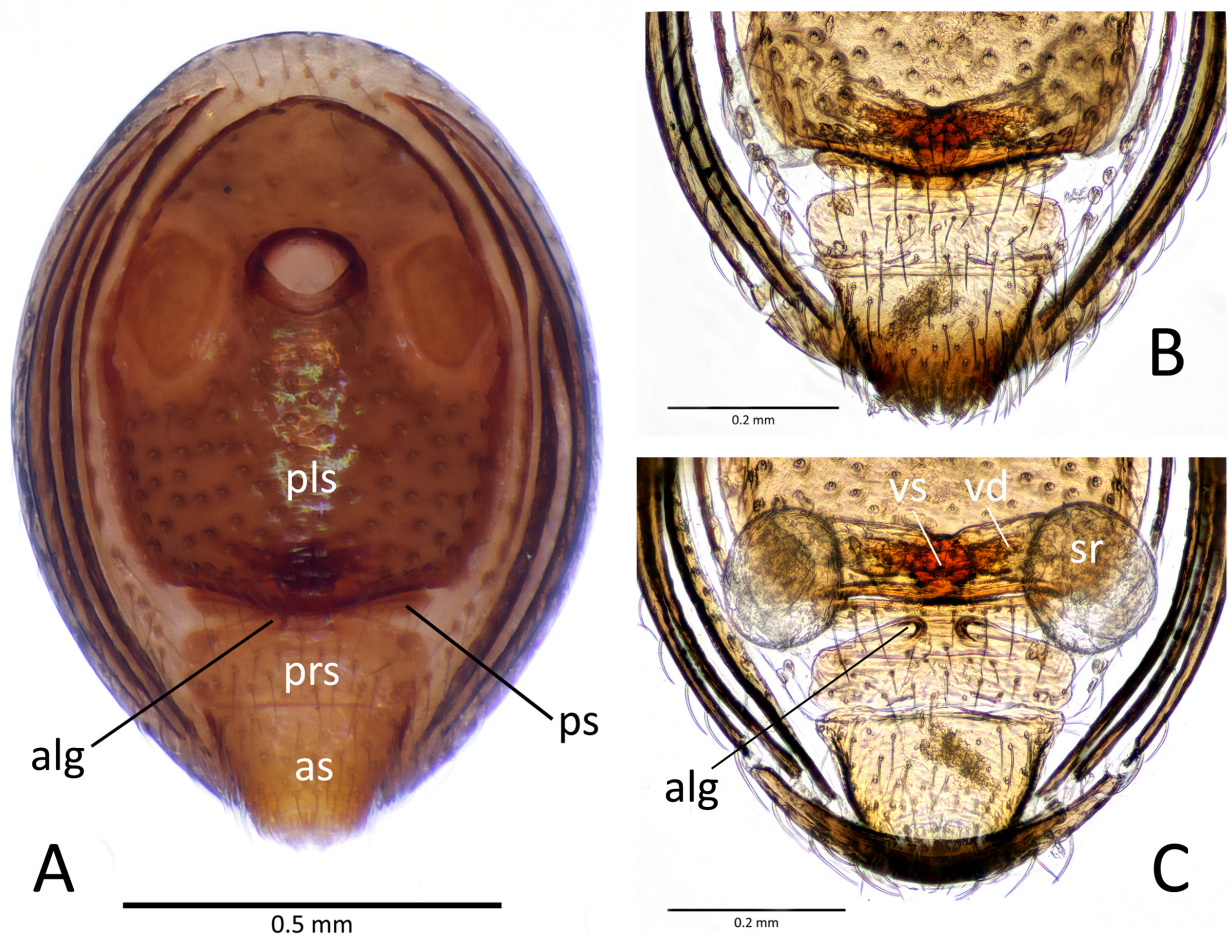


FIGURE 2. *Brignoliella tao* sp. nov. A female opisthosoma, ventral view; B female genital area after maceration, ventral view; C ditto, dorsal view. Abbreviations: alg = anterolateral groove of preanal scutum; as = anal scutum; pls = pulmonary scutum; prs = preanal scutum; ps = postgenital scutum; sr = seminal receptaculum; vd = vulval duct; vs = vulval stem.

Habitat. Humid leaf litter of the rainforest covering the mountain slopes of the island with an altitudinal range of approx. 40–300 m a.s.l. *Brignoliella tao* sp. nov. appears to be absent in other habitats in the coastal areas.

Distribution. Endemic to Orchid Island, widespread along the island (Fig. 7).

Fam. Theridiosomatidae Simon, 1881

Genus *Theridiosoma* O. Pickard-Cambridge, 1879

Theridiosoma triumphale Zhao & Li, 2012

Figs. 3A–D, 4A–E.

T. triumphalis Zhao & Li, 2012: 37, f. 24 A–D, 25 A, B (♂). (**Holotype** ♂ from CHINA: Hainan Island, Mt. Jianfengling National Nature Reserve, Tianchi watershed, 19 JULY 2007, leg. Li S. (IZCAS); examined, based on photos).

Material examined TAIWAN: 1♀, Taitung County, Orchid Island (Lanyu), Hongtong neighborhood, along the trail to Datianchi lake (大天池), Elev. 106m a.s.l., (22°00'46.2"N, 121°34'13.9"E), 13.JUNE.2019, rainforest litter (NMNS); 1♂, 1♀, Dongqing neighborhood, rainforest litter, Elev. 50 m a.s.l., (22°01'42.5"N, 121°34'36.4"E), 14.JUNE.2019, (NMNS); 1♀, same locality, 40 m a.s.l., (22.029878N, 121.575075), 15.JUNE.2019, all leg. Ballarin F. (FBPC).

Diagnosis. For male diagnosis see Zhao & Li 2012, p. 39. Female of this species can be easily distinguished from female of Asian congeners by the presence of a short but well-developed scapus on the epigynal plate. In addition, female *T. triumphale* can be distinguished from female *T. diwang* Miller, Griswold & Yin, 2009 and *T. shuangbi* Miller, Griswold & Yin, 2009 by the position of the spermathecae, located high over the copulatory ducts in contrast with spermathecae located adjacent to the copulatory ducts in the latter two species (see Fig. 4B, C vs. figs. 3G, I in Miller *et al.* 2009).

Description. Male. Measurements: total length: 1.24; carapace: 0.63 long, 0.58 wide.

Habitus as in Fig. 4D. Palp as in Fig. 3A–D. Opisthosoma uniformly yellowish, bearing 3–4 silver patches on the dorsal side, most of them aligned in a transversal stripe around the central part of opisthosoma. For the main description of body and palp see Zhao & Li, 2012, p. 39, 40.

Female. Habitus as in Fig. 4E. Measurements: total length: 1.60; carapace: 0.62 long, 0.56 wide. Carapace uniformly yellowish. Cephalic area distinctly elevated. Chelicera, labium and sternum uniformly yellowish, slightly darker than in the male. Legs yellowish, covered with numerous spines. Tibia, metatarsus and tarsus slightly darker. Leg measurements: I: (1.89) 0.61, 0.24, 0.41, 0.39, 0.24; II: (1.66) 0.53, 0.21, 0.35, 0.34, 0.23; III: (1.06) 0.32, 0.15, 0.18, 0.23, 0.18; IV: (1.43) 0.48, 0.20, 0.28, 0.28, 0.19. Opisthosoma uniformly yellowish, bearing a transverse stripe of silver patches in the middle of the dorsal side, more extended and obvious than in the male. Spinnerets uniformly yellowish.

Epigyne and vulva as in Fig. 4A–C. Epigynal plate flat with a short, squared scape protruding from the posterior margin and a pair of lateral pits. Inner epigynal plate with several small marks. Copulatory ducts large, visible through the translucent ventral cuticle. Copulatory ducts connect to the posterior side of the spermathecae. Fertilization ducts narrow, S-shaped. Spermathecae small and subspherical, close to each other and located in the anterior section of the epigyne, over the copulatory ducts.

Distribution. Known only from two localities: Hainan Island (type locality) and Orchid Island (Fig. 7). This is the first record of this species for Taiwan.

Habitat. Humid rainforest leaf litter.

Remarks. *Theridiosoma triumphale* was described for the first time by Zhao & Li (2012) based on a single male specimen from Hainan Island, China. Due to the poor condition of the sample, no description of the opisthosoma could be included (Zhao & Li 2012 p. 39). The female was previously unknown. We had the opportunity to examine high quality photos of the palp of the holotype and failed to identify significant morphological discrepancies with the specimens from Orchid Island. Minor differences can be attributed to intraspecific variation. Based on this assumption we consider the specimens from Orchid Island as belonging to the same species. Thus, we describe the female for the first time, and illustrate the habitus of both sexes. The new records extend the distribution of *T. triumphale* approximately 1200 km to the east. Despite extensive collections, only few specimens were found and only in the southern part of the island (Fig. 7). *Theridiosoma triumphale* may be widespread, but locally rare.

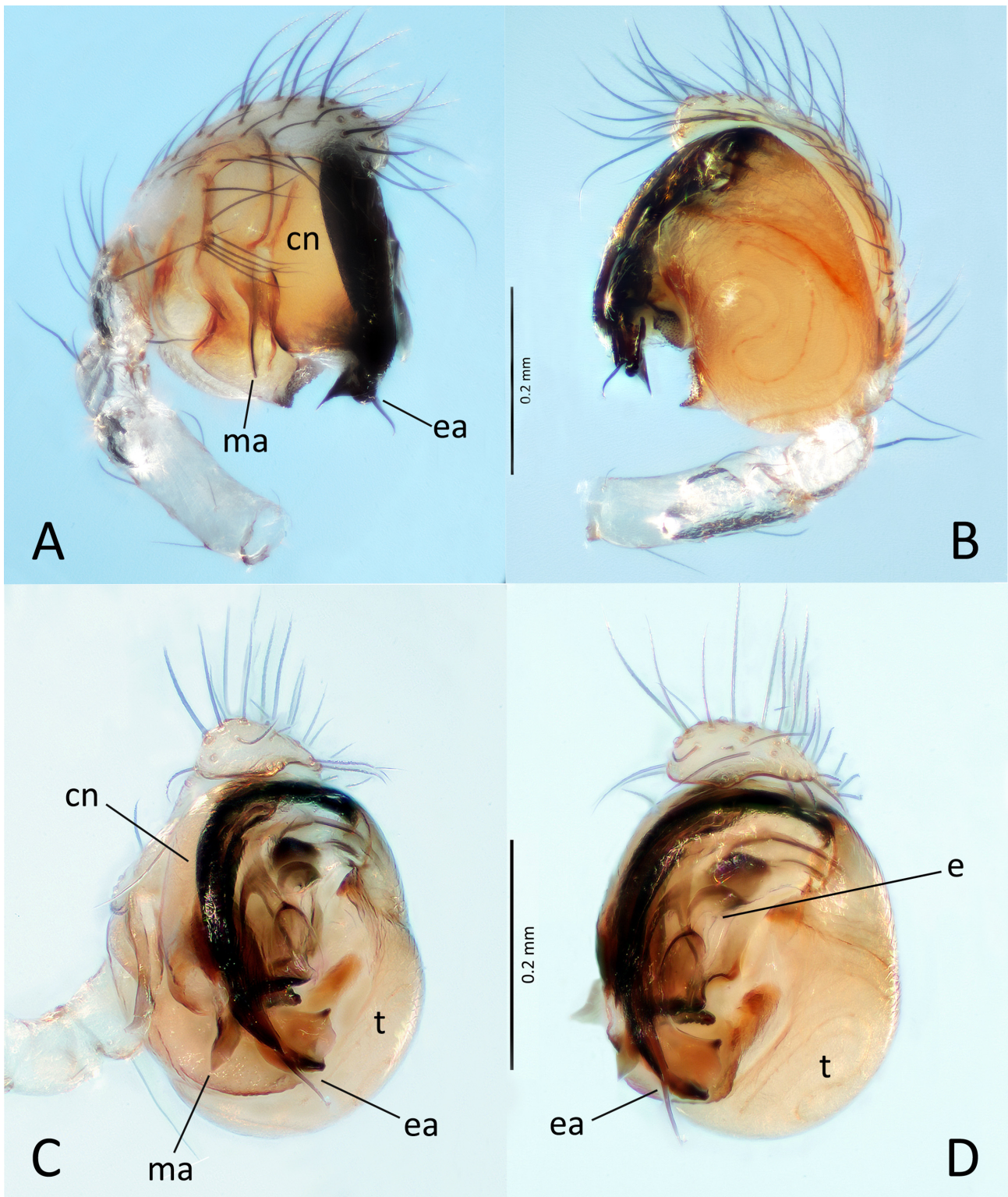


FIGURE 3. *Theridiosoma triumphale* Zhao & Li, 2012 male palp: A. prolateral view; B. retrolateral view; C. ventral view; D. ventro-retrolateral view. Abbreviations: cn = conductor; e = embolus; ea = embolic apophysis; ma = median apophysis; t = tegulum.

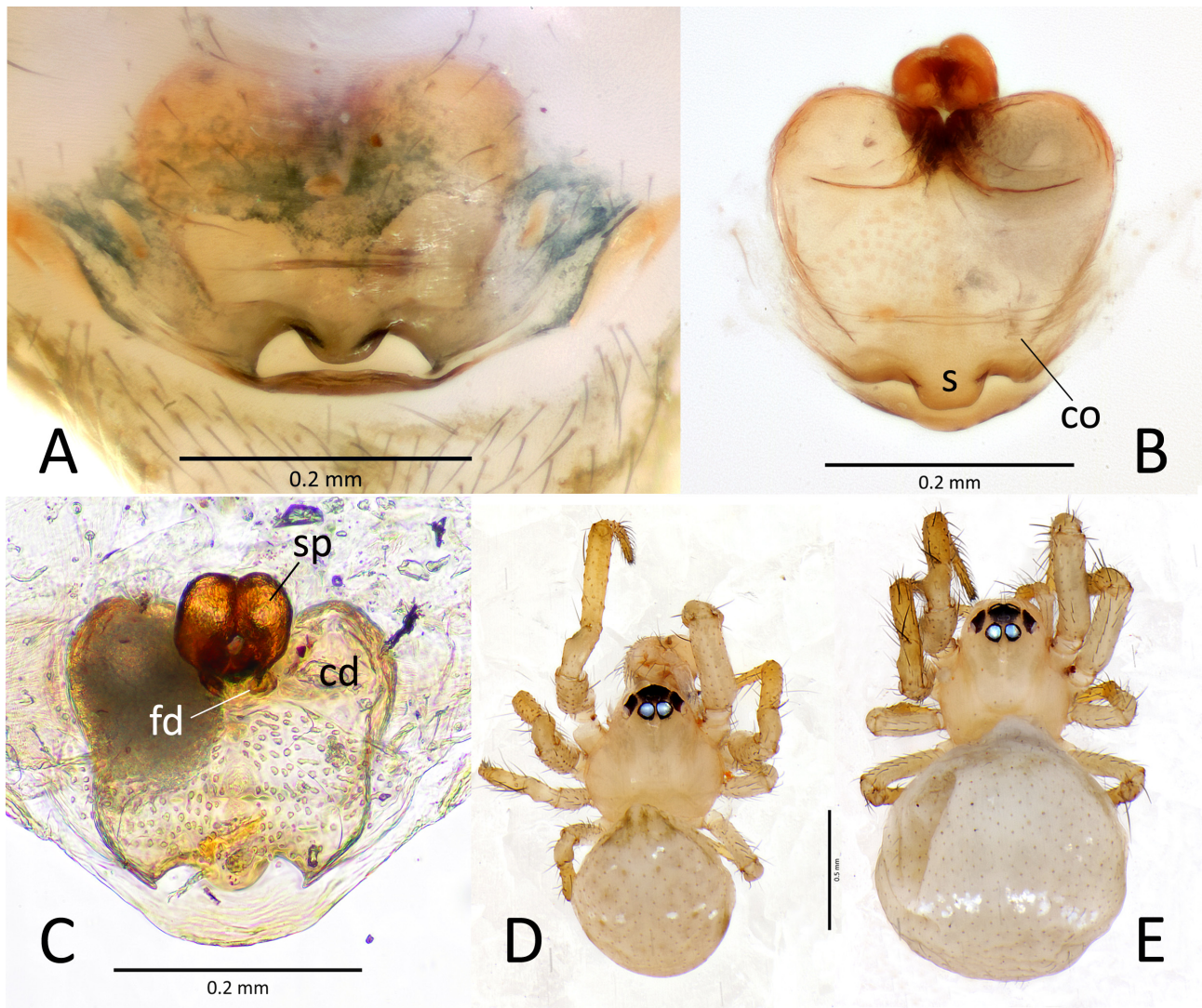


FIGURE 4. *Theridiosoma triumphale* Zhao & Li, 2012: A. epigyne, ventral view; B. epigyne, ventral view after maceration; C. vulva, dorsal view after maceration; D. male habitus; E. female habitus. Abbreviations: cd = copulatory duct; co = copulatory opening; fd = fertilization ducts; s = scapus; sp = spermatheca.

Genus *Zoma* Saaristo, 1996

Zoma taiwanica (Zhang, Zhu & Tso, 2006) comb. nov.

Fig. 5A–G.

Theridiosoma taiwanica Zhang, Zhu & Tso, 2006: 265, f. 1–6 (♂♀).

Material examined. TAIWAN: 3♀♀, 3 juv., Taitung County, Orchid Island (Lanyu), Hongtou neighborhood, along the trail to Datianchi lake (大天池), Elev. 106 m a.s.l., (22°00'46.2"N, 121°34'13.9"E), rainforest litter along the trail, 13.JUNE.2019, (NMNS); 1♂, 1♀, 1juv., along the trail to Datianchi lake (大天池), Elev. 270 m a.s.l., (22°00'59.1"N, 121°34'20.5"E), rainforest litter, 13.VI.2019, (NMNS); 2♀♀, 3 juv. Hongtou forest, walking trail under a bridge, Elev. 68 m a.s.l., (22°00'34.8"N, 121°34'26.1"E), rainforest litter, 17.JUNE.2019, (NMNS); 2♀♀, Dongqing neighborhood, Elev. 50 m a.s.l., (22°01'42.5"N, 121°34'36.4"E), rainforest litter, 14.JUNE.2019, (MSNV); 2♂♂, 3♀♀, same locality, Elev. 40 m a.s.l., (22°01'47.6"N, 121°34'30.3"E), rainforest litter with many stones, 15.JUN.2019, (FBPC); 2♀♀, 2 juv., Langdao neighborhood, near the Shiaotientci lake, Elev. 160 m a.s.l., (22°04'39.7"N 121°30'35.8"E), rainforest litter, 17.JUNE.2019, (NMNS); 4♀♀, near the Lanyu lighthouse, Elev. 200 m a.s.l., (22°04'53.2"N, 121°30'17.7"E), rainforest litter, 17.JUNE.2019, (NSMT). All leg. Ballarin F.

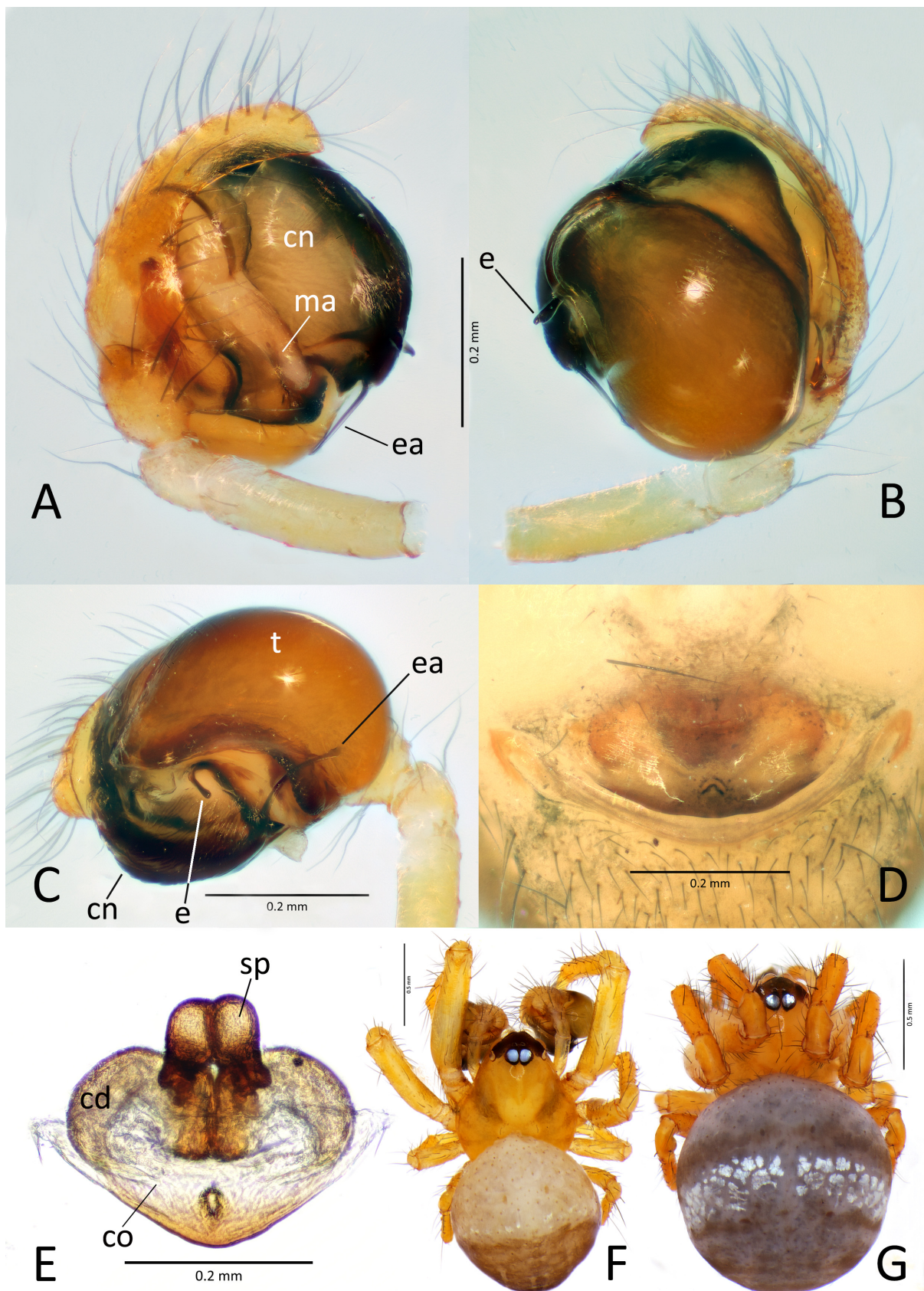


FIGURE 5. *Zoma taiwanica* (Zhang, Zhu & Tso, 2006) **comb. nov.**: A. male palp prolateral view; B. ditto retrolateral view; C. ditto ventral view; D. epigyne ventral view; E. vulva dorsal view after maceration; F. male habitus; G. female habitus. Abbreviations: cd = copulatory duct; cn = conductor; co = copulatory opening; e = embolus; ea = embolic apophysis; ma = median apophysis; sp = spermatheca; t = tegulum.

Diagnosis. Male *Zoma taiwanica* **comb. nov.** can be distinguished from male *Z. dibaiyin* Miller, Griswold & Yin, 2009 by the shorter embolic apophysis (see Fig. 5A, B vs. fig. 10F in Miller *et al.* 2009), and from male *Z. fascia* Zhao & Li, 2012 by the different shape of the embolus (straight rather than Z-shaped and with a different tip, see Fig. 5B, C vs. figs. 28C, 30B in Zhao & Li, 2012). Female *Z. taiwanica* **comb. nov.** can be separated from female *Z. dibaiyin* and *Z. zoma* Saaristo, 1996 by the different, rounded shape of epigynal plate and the higher position of spermathecae (see Fig. 5D, E vs. fig. 11A, B in Miller *et al.*, 2009 and fig. 5 in Saaristo 1996). Apparently, no distinct characters can be found in epigyne and vulva to clearly separate female *Z. taiwanica* **comb. nov.** from female *Z. fascia*.

Description. Habitus of male and female as in Fig. 5F, G. Male palp as in Fig. 5A–C. Female epigyne and vulva as in Fig. 5D, E. For a detailed description of male and female see Zhang, Zhu & Tso 2006, p. 265.

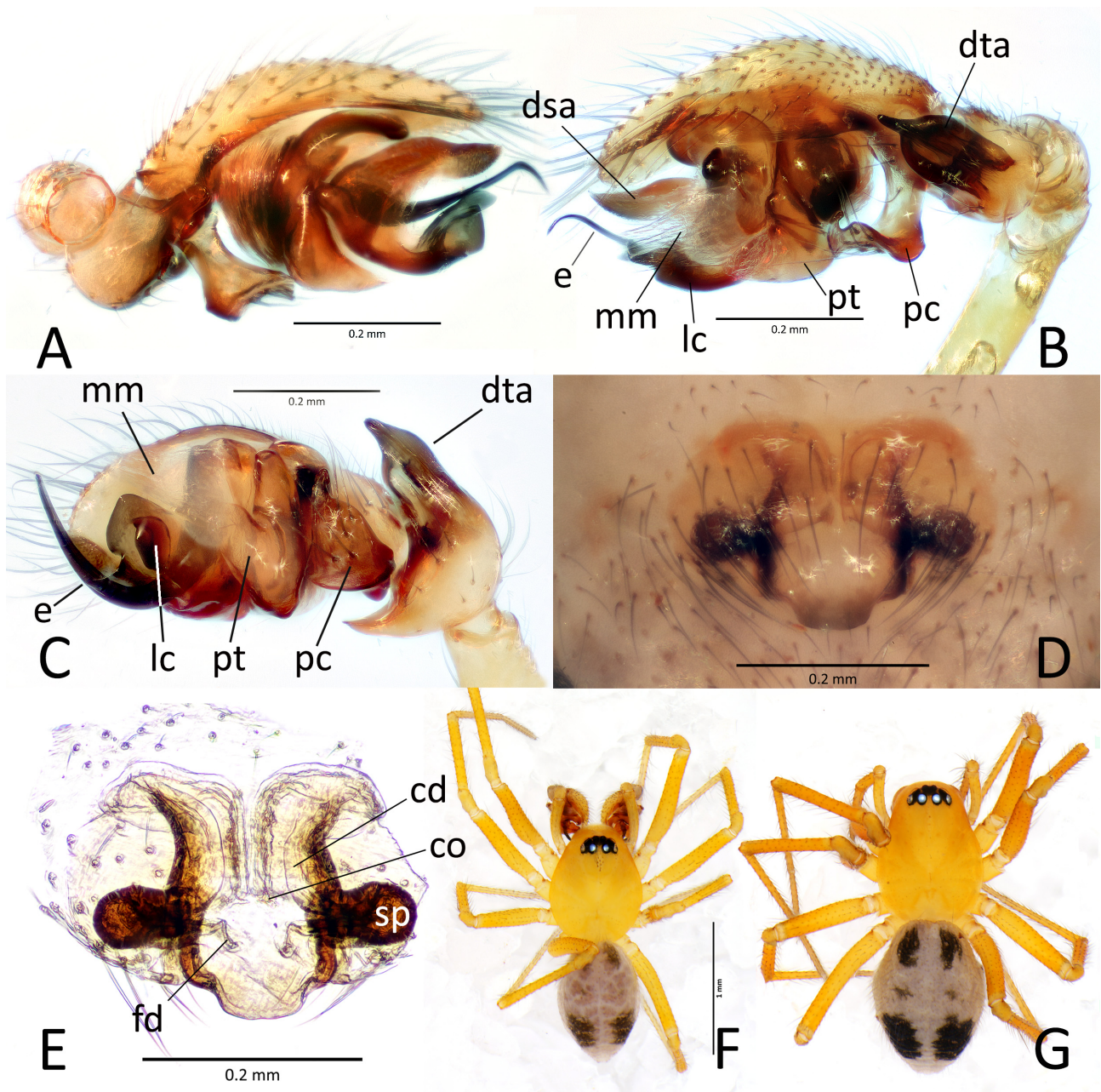


FIGURE 6. *Gongylioides angustus* Tu & Li, 2006: A. male palp prolateral view; B. ditto retrolateral view; C. ditto ventral view; D. epigyne ventral view; E. vulva dorsal view after maceration; F. male habitus; G. female habitus. Abbreviations: cd = copulatory duct; co = copulatory opening; dsa = distal supertegular apophysis; dta = dorsal tibial apophysis; e = embolus; fd = fertilization duct; mm = median membrane; lc = lamella characteristic; pc = paracymbium; pt = protegulum; sp = spermatheca.

Distribution. Southern Taiwan (Pingtung County, Kenting National Park), Orchid Island. Widespread throughout the island. (Fig. 7).

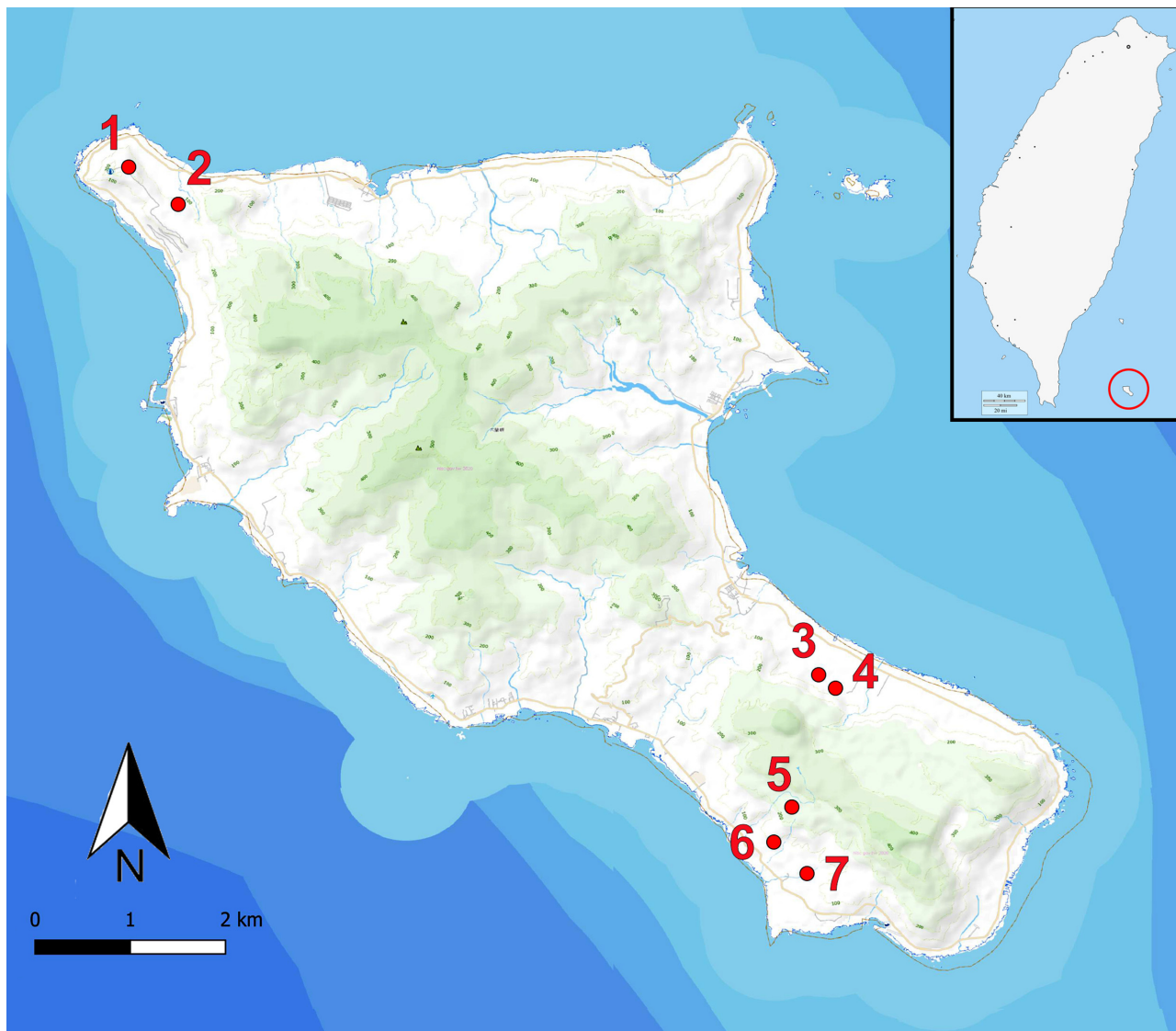


FIGURE 7. Map of Orchid Is., red dots show the localities where the species discussed in the text were collected: *Brignoliella tao* **sp. nov.** (1, 3–7); *Gongylioides angustus* Tu & Li, 2006 (1–7); *Theridiosoma triumphale* Zhao & Li, 2012 (3, 4, 6); *Zoma taiwanica* (Zhang, Zhu & Tso, 2006) **comb. nov.** (1–3, 5–7).

Habitat. Humid rainforest leaf litter.

Remarks. This species was originally described by Zhang *et al.* (2006) and placed in the genus *Theridiosoma* O. Pickard-Cambridge, 1879. In the diagnosis, the authors did not discuss the similarities of the new species with the genus *Zoma* Saaristo, 1996, established on the base of a single species: *Zoma zoma* Saaristo, 1996 from the Seychelles. Careful examination of samples of *Z. taiwanica* **comb. nov.** from Orchid Island, and comparison with the drawings by Zhang *et al.* (2006) allowed us to identify the diagnostic characters of the genus *Zoma* in *Z. taiwanica* **comb. nov.** Similar characters include a flat, bluntly triangular epigynal plate with a wide and shallow median pit (Saaristo 1996); a filiform embolic apophysis of the male palp extending beyond the conductor tip; an embolic division with moderate, simple branching; silver patches on the abdomen forming a curved transverse stripe; and juxtaposed posterior median eyes (Miller *et al.* 2009) (see Fig. 5A–G). On the base of this evidence, we propose to transfer *Theridiosoma taiwanica* Zhang, Zhu & Tso, 2006 to the genus *Zoma*.

A similar species, *Z. fascia* Zhao & Li, 2012, was described from Hainan Island, China. The diagnosis of this species does not include a comparison with *Z. taiwanica* **comb. nov.**, which at the time of publication was still included in the genus *Theridiosoma*. We did not have the opportunity to examine the type specimens of *Z. fascia*.

However, the comparison with the excellent illustrations from Zhao & Li (2012), reveals that the females of *Z. fascia* and *Z. taiwanica* are morphologically very similar. We failed to find any discernible diagnostic characters in the shape of the epigynal plate, internal ducts, or position of spermathecae that would allow a clear separation of the two species. Males, on the other hand, show minor differences in the shape of the embolus. Due to only a single male being illustrated in Zhao & Li (2012), we cannot advise if such differences indicate distinct species, or if they are better interpreted as intraspecific variability within a single, widespread species. We are inclined to suggest that the latter is probably the most parsimonious explanation. A direct morphological comparison between a larger number of specimens from Hainan and Taiwan, as well as the use of molecular data, may help to solve this problem in future.

Fam. Linyphiidae Blackwall, 1859

Gen. *Gongylidioides* Oi, 1960

Gongylidioides angustus Tu & Li, 2006

Fig. 6A–G.

G. angustus Tu & Li, 2006: 55, f. 2A–J (♂♀).

Material examined. TAIWAN: 4♂♂, 3♀♀, Taitung County, Orchid Island (Lanyu), Dongqing neighborhood, Elev. 50m a.s.l., (22°01'42.5"N, 121°34'36.4"E), 14.JUNE.2019, rainforest litter, (NMNS); 1♂, 1♀, same locality, Elev. 40m a.s.l., (22°01'47.6"N, 121°34'30.3"E), 15.JUNE.2019, (NMNS); 2♂♂, 5♀♀, Hongtou neighborhood, along the trail to Datianchi lake (大天池), Elev. 106m a.s.l., (22°00'46.2"N, 121°34'13.9"E), 13.JUNE.2019, rainforest litter, (NMNS); 2♂♂, 4♀♀, same locality and date, Elev. 270m a.s.l., (22°00'59.1"N, 121°34'20.5"E), rainforest litter, (NSMT); 4♂♂, 10♀♀, Hongtou forest, walking trail under a bridge, Elev. 68m a.s.l., (22°00'34.8"N, 121°34'26.1"E), 17.JUNE.2019, rainforest litter (FBPC); 1♂, 8♀♀, Langdao neighborhood, near the Lanyu lighthouse, Elev. 200m a.s.l., (22°04'53.2"N, 121°30'17.7"E), 17.JUNE.2019, rainforest litter, (FBPC); 1♂, 3♀♀, near the Xiaotianchi Lake (小天池), Elev. 160m a.s.l., (22°04'39.7"N, 121°30'35.8"E), 17.JUNE.2019, rainforest litter (MSNV). All leg. Ballarin F.

Description and diagnosis. Male and female habitus as in Figs. 6F and G respectively. Male palp as in Fig. 6A–C, female epigyne and vulva as in Fig. 6D, E. For diagnosis and full description of male and female see Tu & Li 2006.

Distribution. Endemic to Orchid Island. Widespread throughout the island (Fig. 7).

Habitat. Humid rainforest leaf litter.

Remarks. This species was first described by Tu & Li (2006). Herein we provide further detailed photos of genitalia and habitus of both sexes.

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