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A Newly Recorded Spider *Oedignatha platnicki* Song et Zhu 1998 from Taiwan, with Description of the Female (Araneae, Corinnidae)

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ABSTRACT

The corinnid spider, *Oedignatha platnicki* Song et Zhu 1998 is newly recorded from northern Taiwan. It differs from *O. scrobiculata* Thorell 1881 from southern Taiwan by having a relatively smooth carapace and lacking any paired light spots on the abdomen, and from all the other congeners by the male having two minute teeth on the dorsal branch of tibial apophysis, and the female having a mushroom-shaped vulva. Both sexes of *O. platnicki* are described or redescribed, photographed and figured based on materials from Taiwan. The female of *O. platnicki* is described for the first time.

Key words: Araneae, Corinnidae, *Oedignatha*, *Oedignatha platnicki*, *Oedignatha scrobiculata*, new record, Taiwan.

Introduction

The corinnid spiders of the genus *Oedignatha* Thorell 1881 are ground dwellers that inhabit mainly in leaf litter or under rocks. They can be easily distinguished from other corinnids by having a conical hump on the clypeus in front of the anterior median eyes and a brush of dark hair on the posterior lateral spinnerets (Deeleman-Reinhold, 2000). Members of the *Oedignatha* are mainly distributed in the South Asia of Oriental region. Tso et al. (2005) first recorded *O. scrobiculata* Thorell 1881 from Taiwan based on a male specimen collected at Kenting, Pingtung County.

The Mt. Toad is a small hill, with a highest peak of 128 meters above the sea level, situated in the southern part of Taipei City, northern Taiwan. The hill is mainly covered with the secondary broadleaf forest and a layer of dense vegetation near the ground. However, a large deforested area for the cemetery field can be found on its southern slope. Recently, the senior author conducted several pitfall surveys in the Mt. Toad during a field course. A second species belonging to the genus *Oedignatha* was found and it is undoubtedly identical to a monotypic species *O. platnicki* Song and Zhu 1998 described from Hong Kong (Song and Zhu, 1998: 106, figs. 2A-G). In this paper, we described or redescribed both sexes of *O. platnicki* based on materials from Taiwan. The female of *O. platnicki* is described for the first time.

Materials and Methods

Spiders were obtained by pitfall traps from Mt. Toad in July and August 2004, and between May and November 2007. Alcohol-preserved specimens were examined, measured and photographed under a stereomicroscope (Leica M3Z) using an ocular micrometer with up to 80x magnification. Figures were drawn with the aid of a drawing tube attached to the stereomicroscope (Leica M3Z). Examined specimens were preserved in 70% ethanol and deposited in the Arachnological collection of the Department of Life Science, National Taiwan Normal University (NTNUB-Ar). All measurements given are in mm. Measurements of palp are shown as: total length (femur, patella, tibia, tarsus). Measurements of leg are shown as: total length (femur, patella and tibia, metatarsus, tarsus). Abbreviations used in this paper are: AER, anterior eye row; ALE, anterior lateral eye; AME, anterior

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median eye; MOA, median ocular area; PER, posterior eye row; PLE, posterior lateral eye; PME, posterior median eye.

Systematic Account

Oedignatha platnicki Song et Zhu 1998
(Figs. 1-9)

Oedignatha platnicki Song and Zhu, 1998: 105, f. 2 A-F; Song, Zhu and Chen, 1999: 429, f. 255M-N.

Specimens examined. TAIPEI CITY, Wenshan District, Mt. Toad, alt. 100 m, collected by pitfall traps: 5♂♂, NTNUB-Ar 27081-27085, 29 July 2004; 1♂, NTNUB-Ar 27086, 4 Aug. 2004; 2♂♂, NTNUB-Ar 27090, 27091, 19 Aug. 2004; 1♀, NTNUB-Ar 31919, 7 May 2007; 1♂, NTNUB-Ar 41000, 22 June 2007; 1♀, NTNUB-Ar 41003, 25 June 2007; 4♂♂, 2♀♀, NTNUB-Ar 41262-41265, 41274, 41275, 26 Oct. 2007; 1♀, NTNUB-Ar 41290, 2 Sept. 2007; 2♂♂, 4♀♀, NTNUB-Ar 41322, 41324-41328, 16 Sept. 2007. All specimens were collected by Shyh-Hwang Chen.

Diagnosis. *Oedignatha platnicki* differs from *O. scrobiculata* (characters in parentheses) by the relatively smooth carapace (pitted configuration) and without any paired light spots on the abdomen (with 4 pairs of light spots). The shape of tibial apophyses and structures of palpal organs in male palps, and structures of female genital organs are also diagnosed. Of the other congeners, *O. platnicki* most resembles *O. spadix* from eastern Indonesia, but differs from the latter (characters in parentheses) by the male having two minute teeth on the dorsal branch of tibial apophysis (without any minute tooth), and the female having the mushroom-shaped vulva and without the crescent ridge on the epigyne (not mushroom-shaped and present the crescent ridge).

Description. Female (NTNUB-Ar 41322). Total length 6.77; carapace length 2.92, width 2.15; abdomen length 3.85, width 2.46. Measurements of palp and legs: palp 3.54 (1.23, 0.46, 0.77, 1.08); leg I 10.38 (2.69, 3.69, 2.46, 1.54), II 8.16 (2.31, 2.62, 1.92, 1.31), III 7.24 (1.93, 2.23, 1.85, 1.23), IV 10.54 (2.62, 3.31, 2.92, 1.69). Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.17: 0.18: 0.12: 0.12.

Carapace (Fig. 1) reddish brown, smooth and well sclerotized, with a black, longitudinal thoracic groove and dark brown cervical grooves, radial grooves and margin of carapace; clypeus with a conical hump in front of AMEs. AER straight and PER slightly procurved when viewed dorsally. PER longer than AER. ALE > AME > PLE = PME. Distance between AMEs (0.12) longer than that of AME and ALE (0.05), distance between PMEs (0.23) slightly longer than that of PME and PLE (0.22). MOA

length 0.22, anterior width 0.43, posterior width 0.45. Height of clypeus 1.4 times diameter of AME. Chelicerae (Figs. 1, 2) stout, dark brown, geniculate anteriorly, promargin of fang groove armed with 3 robust triangular teeth and retromargin with 7 smaller teeth; fang dark brown. Endite (Fig. 3) brown, longer than width and narrower in the middle. Labium dark brown, hour-glass in shape, longer than width. Sternum heart-shaped, margin concaved at the base of coxa and intruding posteriorly to between coxae IV, and connected with carapace by sclerotized stripes between coxae. Legs formula 4-1-2-3. Leg spination: tibiae I with 10 anterior and 8 posterior ventral spines, II with 9 and 7, III with 2 and 2, and IV with 3 and 2 respectively; metatarsi I with 7 anterior and 6 posterior ventral spines, II with 6 and 5 ventral spines respectively, III and IV each with 2 ventral spines on anterior and posterior margins. Opisthosoma (Figs. 1, 3) ovoid, grayish brown, without any paired white markings; dorsum with a brown, oval scutum covered two fifth of abdominal length, and ventral with a well developed epigastric scutum and a pair of narrow postgenital scuta. Epigynum (Figs. 4, 5) with copulatory openings adjacent to anterior border of epigastric fold. Vulva heavily sclerotized, with short copulatory ducts and two pairs of sperm storage sacs: a larger, relatively thin-walled bursa anteriorily and a smaller, thick-walled spermatheca posteriorily.

Male (NTNUB-Ar 27086). Similar to female in shape and coloration. Total length 6.54; carapace length 3.23, width 2.31; abdomen length 3.31, width 2.00. Measurements of palp and legs: palp 3.77 (1.38, 0.54, 0.62, 1.23); leg I 10.94 (2.85, 3.85, 2.62, 1.62), II 8.91 (2.46, 2.92, 2.15, 1.38), III 7.61 (2.00, 2.38, 2.00, 1.23), IV 10.84 (2.77, 3.38, 2.92, 1.77). Diameters of eyes in ratio, AME: ALE: PME: PLE = 0.19: 0.15: 0.12: 0.13.

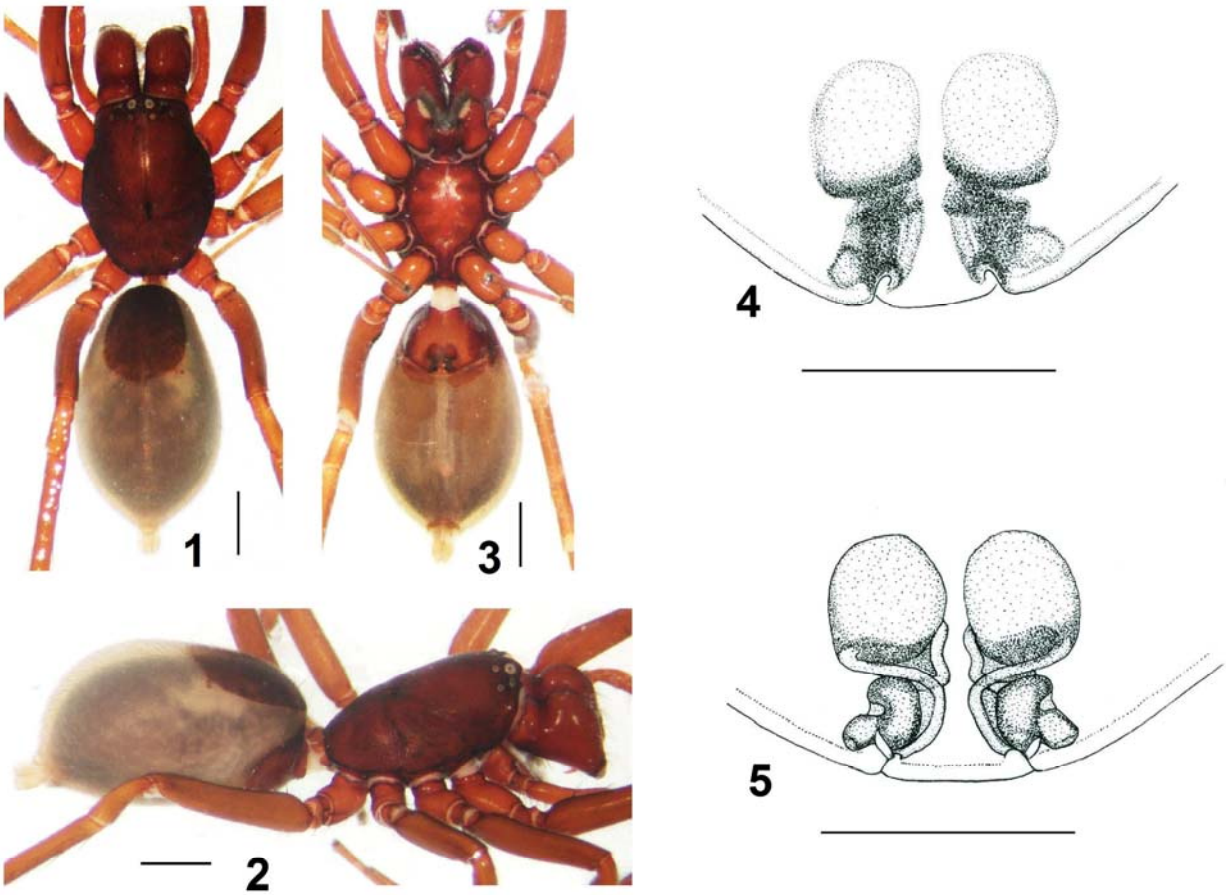

Figure 1–5. *Oedignatha platnicki* Song & Zhu 1998, female (NTNUB-Ar 41322). 1. dorsal side of body; 2. lateral side of body; 3. ventral side of body; 4. epigynum, ventral view; 5. vulva, dorsal view. Scales: 1 mm (1-3) and 0.5 mm (4, 5).

AER straight and PER slightly procurved when viewed dorsally. PER slightly longer than AER. AME > ALE > PLE > PME. MOA length 0.4, anterior width 0.44, posterior width 0.49. Height of clypeus 2 times diameter of AME. A prominent, conical process situated in front of distal end of chelicerae. Promargin of fang groove armed with 3 robust triangular teeth and retromargin with 7 (left) or 8 (right) smaller teeth. Legs formula 1-4-2-3. Leg spination: tibiae I with 9 ventral spines on anterior and posterior margins, II with 8 anterior and 7 posterior ventral spines, III and IV each with 2 ventral spines on anterior and posterior margins; metatarsi I with 7 and 6, II with 6 and 5 anterior and posterior ventral spines respectively, III and IV each with 2 ventral spines on anterior and posterior margins. Opisthosoma (Figs. 6, 7) having a brown dorsal scutum covered nearly all abdominal length, and having well developed epigastric and postgenital scuta ventrally that covered two third of abdominal length. A semi-circular scutum in front of spinnerets.

Palpal tibia (Figs. 8, 9) with two distal apophyses, a pointed fingerlike ventral apophysis and a two-toothed claw-like retrolateral one. Conductor well sclerotized; a narrow membranous tegular apophysis aligned with conductor; thread-like embolus longer, arising retrolaterally and curving in a 3-quatore circle around tegulum, clockwise in left palp.

Variations. Five females and six males were measured. Variations among females are followed by those of males (with the mean in parentheses). Total length 5.77-6.77 (6.17) and 5.08-6.54 (5.76);

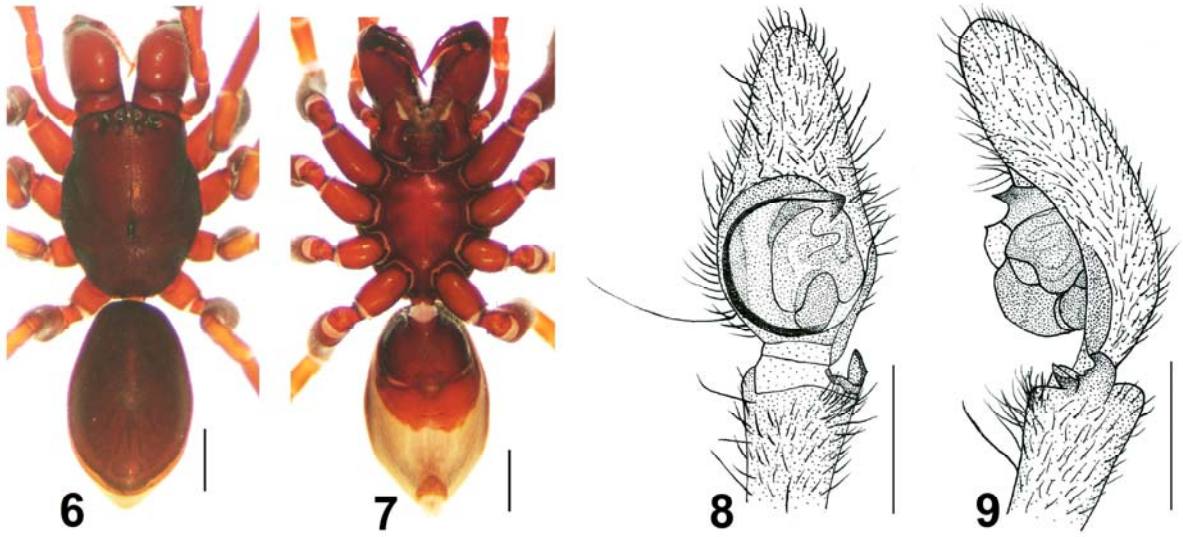

Figure 6–9. *Oedignatha platnicki* Song & Zhu 1998, male (NTNUB-Ar 27086). 6. dorsal side of body; 7. ventral side of body; 8. left male palp, ventral view; 9. left male palp, prolateral view. Scales: 1 mm (6, 7) and 0.5 mm (8, 9).

carapace length 2.54 -3.00 (2.77) and 2.46-3.23 (2.84), width 1.85-2.15 (2.03) and 1.77-2.31 (2.00); abdomen length 3.08-3.85 (3.40) and 2.62-3.31 (2.93), width 1.69-2.46 (2.15) and 1.62-2.00 (1.75). Promargin of fang groove armed with 3 robust teeth, and retromargin varying with 6-8 in both sexes. Ventral spines on left legs in five females counted: tibiae I with 9-10 (mostly 10, in 60%) on anterior margin and 8-9 (mostly 9, in 60%) on posterior margin, II with 8-9 (mostly 9, in 80%) and 6-7 (mostly 7, in 80%), III with 2 and 2, and IV with 2-3 (mostly 3, in 80%) and 2 respectively, and metatarsi I with 6-7 (mostly 7, in 60%) and 6, IIwith 6 and 5, III with 2 and 2, and IV with 2-3 (mostly 2, in 80%) and 2 respectively. Ventral spines on left legs in six males counted: tibiae I with 9 on anterior margin and 8-9 (mostly 8, in 83%) on posterior margin, II with 7-9 (mostly 8, in 67%) and 5-9 (mostly 7, in 50%), III with 2-4 (mostly 2, in 67%) and 2-4 (mostly 2, in 67%), and IV with 3-5 (mostly 3, 67%) and 2-3 (mostly 2, 67%) respectively, and metatarsi I with 6-7 (mostly 6, 67%) and 6, II with 6 and 4-5 (mostly 5, 83%), III with 2-3 (mostly 2, in 83%) and 1-2 (mostly 2, in 83%), and IV with 2-3 (mostly 2, in 83%) and 2-3 (mostly 2, in 83%) respectively.

***Distribution*.** Hong Kong and Taiwan.

Discussion

Genus *Oedignatha* currently contains 36 species world-wide (Platnick, 2009), of which only *O. platnicki* and *O. scrobiculata* (=*Phrurolithus ulopatulisus* Barrion et Litsinger 1995) have been recorded from Hong Kong and the Philippines, respectively, neighboring the main island of Taiwan (Song and Zhu, 1998, Deeleman-Reinhold, 2001). In this paper, we confirm the presence of both species in Taiwan. Their distribution may be allopatric in the main island of Taiwan. Up to the present, *Oedignatha platnicki* is known only from northern Taiwan, i.e., Taipei City (Mt. Toad) and Taipei County (Mt. Kuanyin, Chen unpublished data), while *O. scrobiculata* is from southern Taiwan, Kengting, Pingtung County (Tso et al., 2005) and from eastern Taiwan, Lichia, Taitung County (Chen unpublished data), about 100 km north to the Kengting National Park. However, our inference is based on insufficient data. Further investigation is needed.

Oedignatha scrobiculata shows remarkably sexual dimorphism (Deeleman-Reinhold, 2001). Our study indicates that *O. platnicki* also shows conspicuous sexual dimorphism. Heavily sclerotized scuta of the opithosoma, including a dorsal scutum, a ventral epigastric scutum and a pair of postgenital scuta, are much well developed

in male than in female in *O. platnicki*. Leg I is the longest leg in male, while leg IV is the longest one in female. All these features are the same as those in *O. scrobiculata.*

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台灣新紀錄種蜘蛛普氏膨顎蛛之記述及其雌蛛之首次發現 (蜘蛛目，管蛛科)

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摘　要

本文首次報導普氏膨顎蛛(*Oedignatha platnicki* Song et Zhu 1998)在台灣北部地區之發現。普氏膨顎蛛與台灣南部之點刻膨顎蛛(*O. scrobiculata* Thorell 1881) 之主要區別在於背甲較光滑，腹部背面沒有成對的藍灰色斑紋；而雄蛛觸肢之脛節突背支具有二枚小齒及雌蛛具有蕈狀之內部生殖構造，可與本屬其他種類相區別。本文根據台灣之普氏膨顎蛛標本重新進行描述、拍照及繪圖。雌蛛為首次被記錄及描述。

關鍵詞：蜘蛛目、管蛛科、膨顎蛛屬、普氏膨顎蛛、點刻膨顎蛛、新紀錄種、台灣

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