



A new species and records of *Diolenius* Thorell, 1870 (Araneae: Salticidae) from New Guinea

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Abstract

Diolenius sarmiensis sp. nov. is recorded, described and illustrated from New Guinea.

Key words: new species, Diolenieae, New Guinea

Introduction

The genus *Diolenius* was established by Thorell (1870) for *Attus phrynoides* Walckenaer, 1837, the generic type. As revised by Gardzińska and Żabka (2006) it includes 14 species from tropical rain forest of New Guinea, New Britain, the Moluccas and some adjacent islands.

Diolenius is closely related to *Ohilimia* Strand, 1911 and *Chalcolecta* Simon, 1884; all are endemic to tropical Australasia (Gardzińska & Żabka, 2005, 2006; Gardzińska, 2006; Hill, 2010) and share the following combination of characters: first legs in both sexes longer and more robust than others, with elongate (particularly in males) trochanters I; posterior medial and posterior lateral eyes situated on distinct tubercles, abdomen in males with dorsal and ventral scuta; palpal organ with embolus partly hidden behind tegulum; epigyne with strongly sclerotized margins, its insemination ducts with terminal chambers, accompanied with accessory glands and connected with spermathecae via narrow channels (after Gardzińska, 2004, 2006; Gardzińska & Żabka, 2005, 2006). Bohne et al. (2011) provided the figures of living *Diolenius* and discussed the possible functions of its raptor-like first legs in the predation, courtship display or mimicry.

Material and methods

The study is based on the New Guinean arachnological material (B. P. Bishop Museum, Honolulu, Hawaii, U. S. A. collection (BISHOP), currently deposited in the Royal Belgian Institut of Natural Sciences (RBINS). The digital images were taken with a Canon PowerShot A620 digital camera and processed with ZoomBrowser and HeliconFocus software. Measurements are given in millimetres.

Abbreviation used: AEW: anterior eyes width, AG: accessory gland, AL: abdomen length, AME: anterior medial eyes, AW: abdomen width, CH: cephalothorax height, CL: cephalothorax length, CO: copulatory opening, CW: cephalothorax width, E: embolus, EFL: eye field length, Eg: edge; F: basal flange of tibial apophysis, ID: insemination duct, LI: length of leg I (coxa-tarsus), PEW: posterior eyes width, PME: posterior medial eyes, RTA: retrolateral tibial apophysis, S: spermatheca, Sp: spermophore, W: wing-shaped sclerotization of epigyne.

Genus *Diolenius* Thorell, 1870

Attus [part.]: Walckenaer 1837: 402.

Salticus [part.]: Doleschall 1859: 26.

Diolenius Thorell 1870: 203; Keyserling 1883: 1471; Simon 1884: 226–228, 1901: 385, 476, 479, 480; Peckham & Peckham 1886: 265, 272; Strand 1907: 568, 1909: 97; Rainbow 1911: 281; Petrunkevitch 1928: 186; Berland 1932: 103; Prószyński 1990: 116; Gardzińska & Żabka, 2006: 387–433, Bohne et. al. 2011: 1–6.

subg. *Diolenella*: Strand 1907: 568, 1909: 97; Petrunkevitch 1928: 218; Bonnet 1956: 1473–1474.

Type species: *Attus phrynoides* Walckenaer, 1837, subsequently designated by Thorell (1870).

Diagnosis (after Gardzińska 2004, and Gardzińska & Żabka, 2006). Fissidentate spiders, 4–8.5 mm long, with more or less myrmecomorph appearance, manifested by the shapes of cephalothorax and abdomen, moderately long pedicel, visible from dorsal view and slender, antenniform distal segments (metatarsi and tarsi) of legs I. In comparison to *Ohilimia*, the closest relative, metatarsi I of both sexes with 5 or 7 pairs of ventral spines (in opposition to 3 pairs in *Ohilimia*), shape of tegulum triangular and flat, tibial apophysis of palpal organ with basal flange, wings of epigyne located laterally and spermathecae relatively larger than distal chambers of insemination ducts. Differs from *Chalcolecta* by trochanters I markedly longer (always longer than coxae), eye tubercles relatively larger, dorsal surface of carapace papillate or granulate (smooth in *Chalcolecta*) and armature of metatarsi I different (in *Chalcolecta* males without spines and females with 3 pairs of ventral spines).

***Diolenius sarmiensis* sp. nov.**

(Figs 1–17)

Type material. M Holotype, F Allotype, Paratypes: 5M, 1F, 1 juv. (BISHOP), New Guinea, Boden Sarmi District, 4-17.VII.1959, T. Maa.

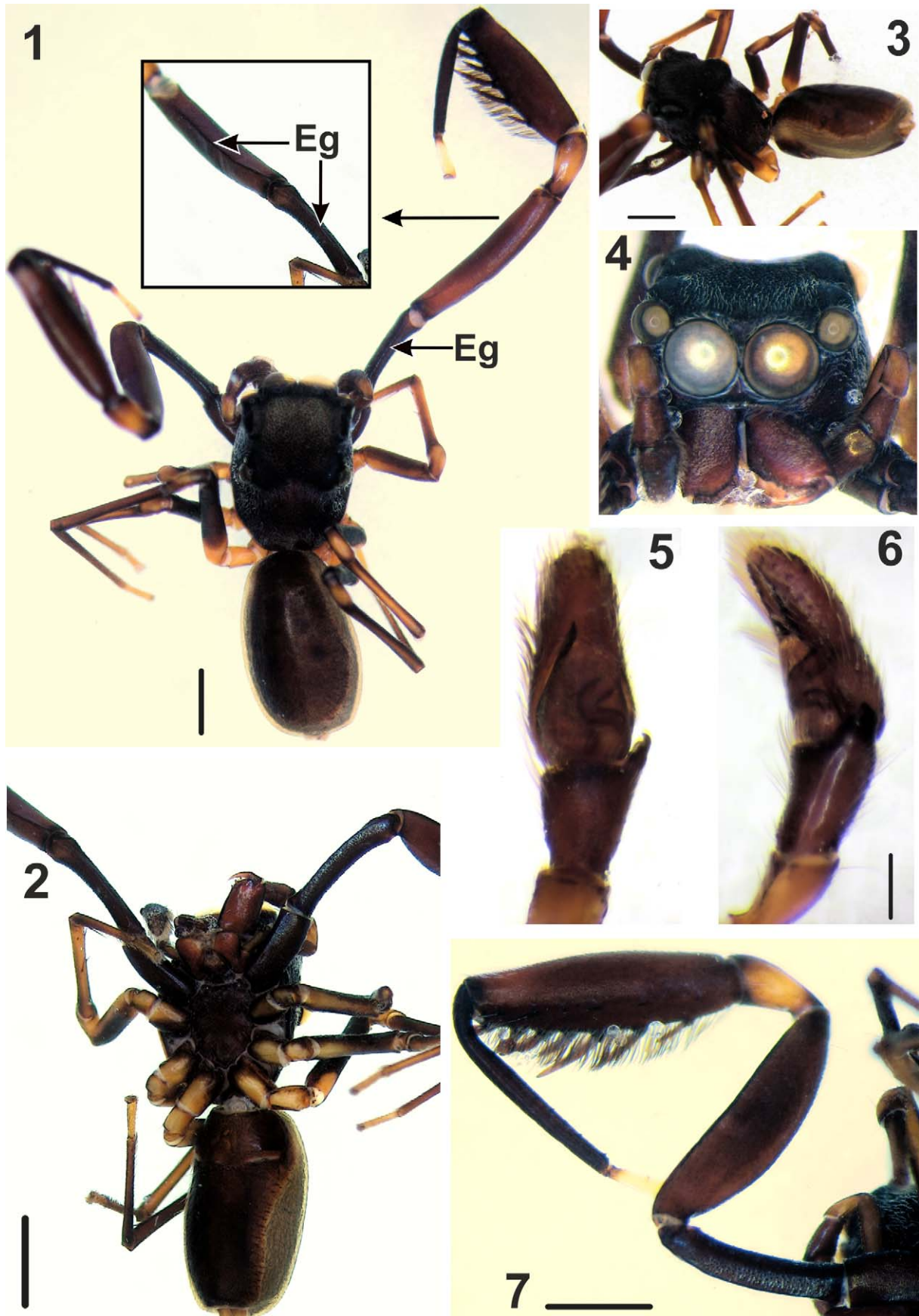
Etymology. Named from the type locality.

Diagnosis. Spiders about 4–5 mm long. Compared to similar *D. insignitus* cephalothorax relatively broader (about 79% of CL), abdomen without transverse stripe of pallid hairs, palpal organ with embolus longer (arising at 6 o'clock) and tibial apophysis much broader, epigyne with insemination ducts parallel to each other and accessory glands relatively smaller. In comparison with *D. paradoxus* spermophore strongly meandering and basal flange of male palpal apophysis relatively smaller.

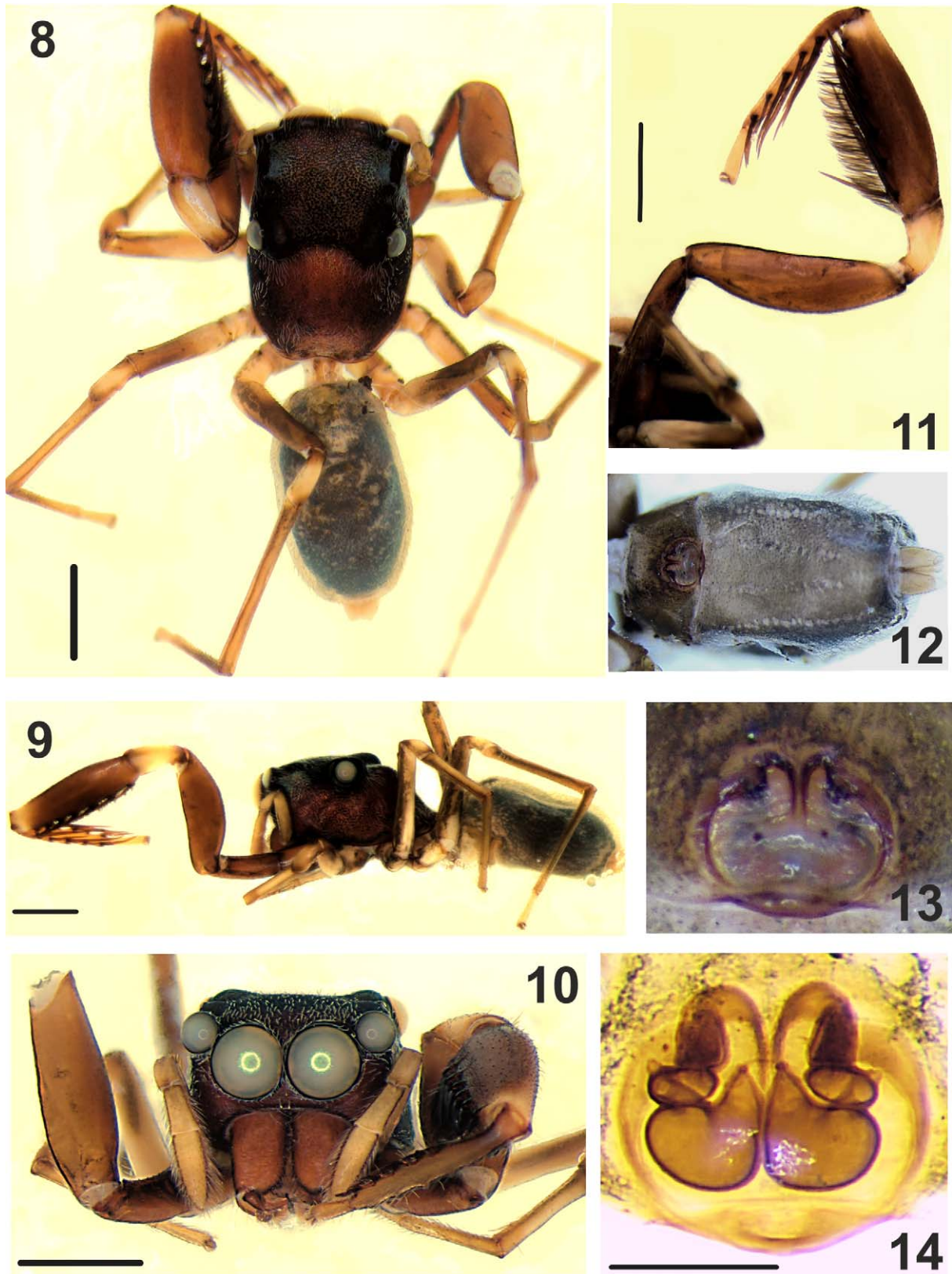
Description. Male holotype (Figures 1–7, 15–16). Carapace strongly papillate, dark brown, with lateral patches of pallid hairs behind PLE and distally. Clypeus, endites and labium somewhat paler than dorsal surface of cephalothorax. Sternum dark brown. Abdomen ovoid, not constricted, grey, with shiny, dark brown dorsal and ventral scuta. Spinnerets orange. Legs I brown, except of orange patellae and yellow tarsi, other legs orange, with dark brown pigmented lateral surfaces of femora, tibiae and metatarsi. Trochanters I slender and elongate, but shorter than femora and tibiae (67% of femora and 72% of tibiae I length), papillate, with strongly marked dorsal and ventral edges (Fig. 1, see arrow). Femora I with distinct retroventral edges (Fig. 1, see arrows). Tibiae I with ventral fringe of flattened stiff setae and two rows of ventral spines—of them the retroventral much shorter and slenderer than the proventral ones. Both rows of ventral spines on metatarsi I short. Leg I spination: tibia: 7+7, metatarsus: 5+5. Pedipalps brown with orange patellae. Palpal organ: embolus relatively long, simple, sabre-like, distally set on tegulum; part of spermophore translucent through tegulum strongly meandering; retrolateral tibial apophysis broad, with small, rather indistinct basal flange.

Dimensions. CL 2.40, CW 1.90, CH 1.40, AEW 1.75, PEW 1.78, EFL 1.50, AL 2.90, AW 1.85, LI 12.08 (1.25+1.80+2.70+1.00+2.50+2.15+0.68).

Female allotype (Figures 8–14, 17). Carapace brown, darker in eye field, with patches of fine, pallid hairs similar to male and numerous papillae. Clypeus, chelicerae, endites and labium pale brown. Sternum brown. Abdomen ovoid, dark grey, with indistinct colour pattern. Venter grey, darker on sides. Spinnerets yellow. Legs I pale brown, except of yellow patellae, tips of tibiae and whole tarsi; other legs yellow, with brown pigmented lateral surfaces. Trochanters I longer than coxae I, but markedly shorter than femora and tibiae I (53% of femora and 58 % of tibiae I length). Tibiae I with two rows of strong and long ventral spines and the fringe of dense setae. Ventral spines on metatarsi I long. Leg I spination: tibia: 7+7, metatarsus: 5+5. Epigyne: lateral wings broad, insemination ducts parallel to each other, proximal parts relatively narrow, spermathecae distinctly larger than distal chambers of insemination ducts, channels relatively wide, accessory glands small, located as in Figs 14, 17. Dimensions. CL 2.40, CW 1.80, CH 1.20, AEW 1.70, PEW 1.75, EFL 1.50, AL 2.43, AW 1.38, LI 9.20 (0.90+1.15+2.15+0.85+2.00+1.60+0.55).

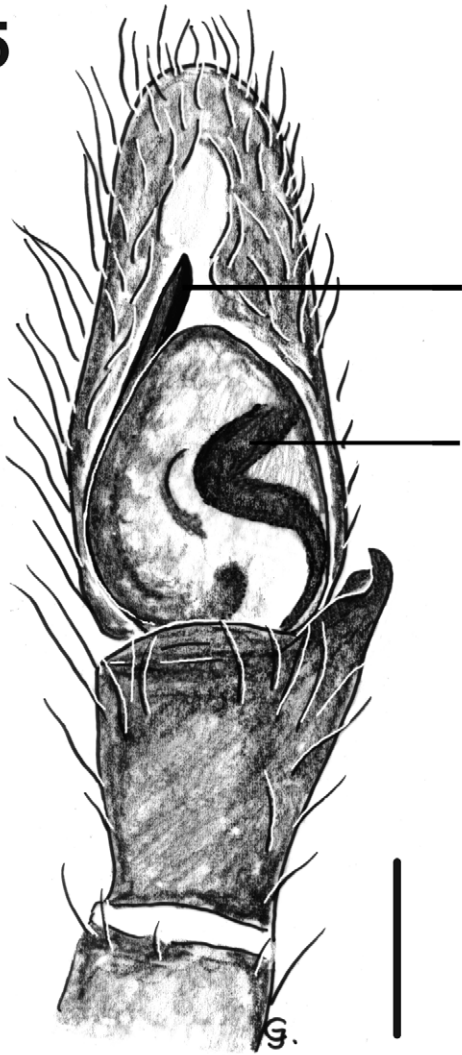


FIGURES 1–7. *Diolenius sarimiensis* **sp. nov.**, male holotype. 1 general appearance, dorsal view, with femur I and trochanter I from ventral view; 2–3 general appearance, ventral and lateral views; 4: cephalothorax, frontal view; 5–6 palpal organ, ventral and retrolateral views; 7 leg I, retrolateral view. Scale bars 1–3, 7: 1 mm; 6: 0.2 mm.

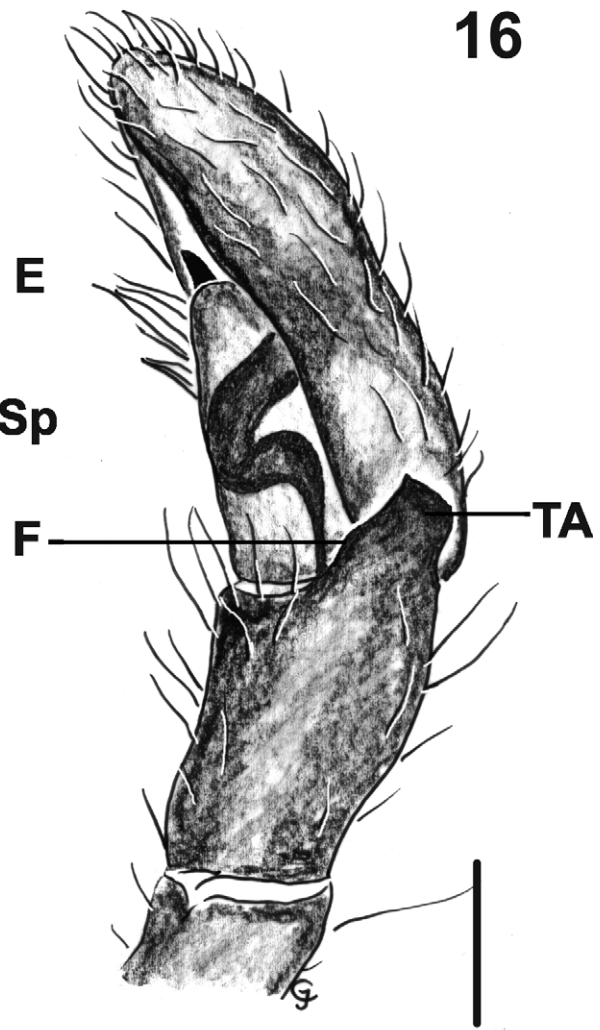


FIGURES 8–14. *Diolenius sarmiensis* sp. nov., female allotype. 8–9 general appearance, dorsal and lateral views; 10 cephalothorax, frontal view; 11 leg I, retrolateral view; 12 venter; 13–14 epigyne and its internal structures. Scale bars 8–11: 1 mm; 14: 0.2 mm.

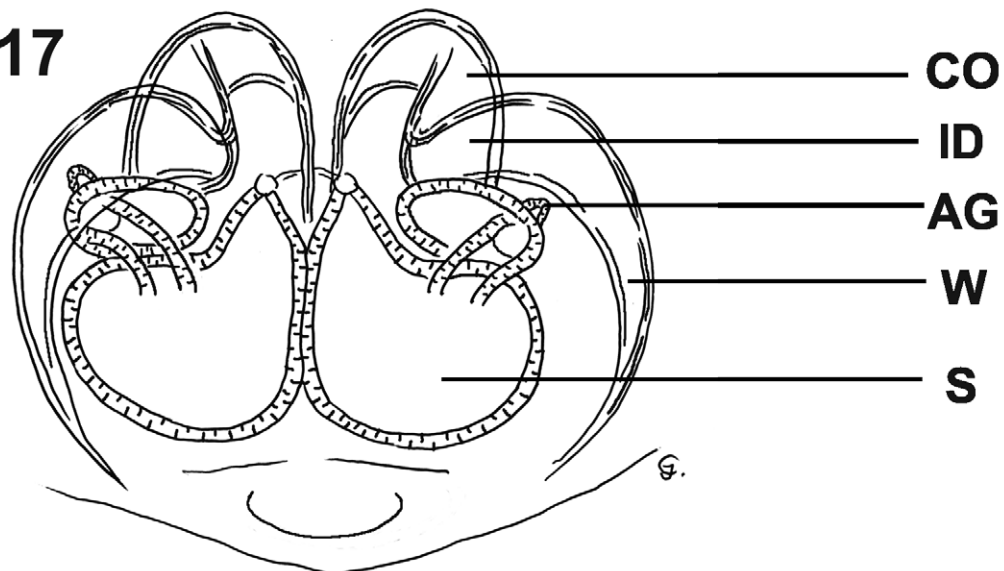
15



16



17



FIGURES 15–17. *Diolenius sarmiensis* sp. nov., male and female copulatory organs. 15–16 male holotype palpal organ, ventral and retrolateral views; 17 female allotype internal structures of epigyne. Scale bars: 0.2 mm.

***Diolenius albopiceus* Hogg, 1915**

Material. 1F (BISHOP, 227), New Guinea, Western District, Oriomo, 29.X.1960, J.L. Gressitt.

***Diolenius armatissimus* Thorell, 1881**

Material. 1M (BISHOP, 219), New Guinea, Netherlands, Waris, VII-VIII. 1959, T.C. Maa.

***Diolenius phrynoides* (Walckenaer, 1837)**

Material. 1F (BISHOP, 250), New Guinea, Netherlands, Vogelkop, Kabar, 550m, 13.I.1962, L. & S. Quate; 1 F (BISHOP, 144), New Guinea, Netherlands, 10.VI.1962, Holtmann jungle.

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