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A REVISION OF THE SPIDER GENUS *DIOLENIUS* THORELL, 1870 (ARANEAE: SALTICIDAE)

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Abstract.— The genus *Diolenius* Thorell is revised to include 14 species, 9 of them new to science. *Diolenius carinifer* Strand is synonymised with *D. armatissimus* Thorell. A female of *D. armatissimus* is described for the first time. *Diolenius bicinctus* Simon is considered *nomen dubium*. Four species: *D. albomaculatus* Thorell, *D. bifasciatus* Thorell, *D. venustus* Thorell and *D. vittatus* Thorell hitherto included in *Diolenius* are transferred to *Ohilimia*. For *D. phrynoides* a neotype specimen is designated. All species of *Diolenius sensu stricto* are diagnosed, described and illustrated. A key to the species of *Diolenius* and distributional maps are provided. The genus is closely related to *Chalcolecta* Simon, 1884 and *Ohilimia* Strand, 1911 and its range is restricted to rain forests of New Guinea, New Britain, The Moluccas and some adjacent islands.

Key words.— Araneae, Salticidae, *Diolenius*, Dioleninae, taxonomy, New Guinea, New Britain, The Moluccas.

INTRODUCTION

The genus *Diolenius* was established by Thorell (1870) for *Attus phrynoides* Walckenaer, 1837. In 1881 seven other species (*D. albomaculatus*, *D. amplectens*, *D. armatissimus*, *D. bifasciatus*, *D. lugubris*, *D. venustus*, *D. vittatus*) were described by the same author. In 1884 Simon added *D. bicinctus* and in 1901, provided the first generic diagnosis and divided the genus into three species-groups based upon ventral spination of metatarsi I. Further contributions were made by Strand (1907) and Hogg (1915) who described *D. carinifer* and *D. albopiceus*, respectively. Single species of the genus *sensu stricto* were illustrated by Koch (1881), Simon (1901), Prószyński (1984) and Chrysanthus (1968). Altogether, Prószyński (2003) and Platnick (2005) list 11 nominal species in *Diolenius*, most of them poorly defined. The aim of this work was to redefine the genus and provide complete data on its species, relationships and distribution.

MATERIAL AND METHODS

The specimens were provided by the following institutions:

AMS – Australian Museum, Sydney (Dr. M. Gray, Mr. G. Milledge);
BMNH – British Museum (Natural History), London (Dr. P. D. Hillyard, Ms J. Margerison);
RSN – Institut Royal des Sciences Naturelles de Belgique, Brussels (Dr. L. Baert);
IZPAN – Muzeum i Instytut Zoologii Polskiej Akademii Nauk, Warszawa (Dr. J. Szwedo);
MCSNG – Museo Civico di Storia Naturale "Giacomo Doria", Genova (Dr. G. Doria);
MCVR – Museo Civico di Storia Naturale, Verona, (Dr. L. Latella);
MNHN – Muséum National d'Histoire Naturelle, Laboratoire de Zoologie, Paris (Dr. C. Rollard),
NHR – Naturhistoriska Riksmuseet, Stockholm (Dr. T. Kronestedt);
NMNH – Rijksmuseum of Natuurlijke Historie, Leiden

(Dr. E. J. van Nieukerken, Mrs B. Van Bekkum-Ansari);
NMW – Naturhistorisches Museum, Wien (Dr. J. Gruber);
QMB – Queensland Museum, Brisbane (Dr. R. Raven);
SMF – Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt a. Main (Dr. M. Grasshoff);
ZMB – Zoologisches Museum der Humboldt Universität, Berlin (Dr. J. Dunlop).

The drawings were made using grid system. Measurements of types and size ranges for other specimens are given in mm. Dissected epigynes and male palps (if necessary) were cleared in lactic acid and studied under stereo and compound Nikon microscopes.

Abbreviation used: AEW – anterior eyes width, ag – accessory gland, AL – abdomen length, ALE – anterior lateral eyes, AME – anterior median eyes, AW – abdomen width, CH – cephalothorax height, CL – cephalothorax length, clp – clypeus, co – copulatory openings, CW – cephalothorax width, DAME – diameter of AME, e – embolus, EFL – eye field length, f – flange of tibial apophysis, LI – leg I, m – metatarsus, PEW – posterior eyes width, PLE – posterior lateral eyes, PME – posterior median eyes, r – ramus of embolus, s – spermatheca, si – sinus of insemination duct, sd – sperm duct, ta – tibial apophysis, t – tibia, w – wing-shaped lateral margins of epigyne.

TAXONOMY

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 and Peckham 1886: 265, 272; Waterhouse 1902: 109; Strand 1907: 568, 1909: 97; Rainbow 1911: 281; Petrunkevitch 1928: 186; Berland 1932: 103; Neave 1939: 99; Roewer 1954: 987–988; Bonnet 1956: 1473–1474; Brignoli 1983: 626; Platnick 1989: 556, 1998: 875, 2005: http://research.amnh.org/entomology/spiders/catalog/SALTICIDAE.html; Prószyński 1990: 116, 2003: http://www.miiz.waw.pl/salticid/main.htm
subg. *Diolenella*: Strand 1907: 568, 1909: 97; Petrunkevitch 1928: 218; Neave 1939: 99; Roewer 1954: 987–988; Bonnet 1956: 1473–1474.

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

Diagnosis. Eyes on large tubercles. Chelicerae of fissident pattern. Some species myrmecomorph in appearance. First legs the longest, with enormously elongate trochanters I. Compared to related *Chalcolecta* trochanters I longer than coxae I, thoracic part of carapace papillate, tibiae I usually with 7 pairs and metatarsi I with 5–7 pairs of ventral spines. Compared to *Ohilimia* bulbus triangular and tibial apophysis with basal flange.

Description. Spiders 4 to 8.5 mm long. Sexes similar in appearance, though males with abdominal scuta and trochanters I relatively longer. Cephalothorax moderately high, either narrow and elongate (CW < 60% CL) or nearly oval (CW > 70% CL); thoracic part papillate (Figs 3, 5–10). Eyes in three rows, eye field trapezoid or rectangular, takes 40–50% of CL (Fig. 1). Clypeus narrow, 20–25% of AME diameter, with few thin, pallid hairs (Fig. 4). Chelicerae of fissident pattern, with round frontal surfaces. Maxillae slightly divergent, without modifications, only in *D. virgatus* with transverse furrows (Fig. 191). Labium longer than broad. Sternum scutiform. Pedicel moderately long, in myrmecomorph species visible in dorsal view. Abdomen elongate-ovoid to cylindrical, sometimes slightly constricted in anterior third, with transverse stripes or longitudinal lines of pallid hairs. In males abdomen with dorsal and ventral scuta. Spinnerets of medium length, posterior ones slightly longer than anteriors and medians. Leg formula: I-IV-III-II. First legs more robust than others. Trochanters I considerably elongate. In *D. angustipes* and *D. albopiceus* tibiae I slender with no fringe, otherwise tibiae I moderately robust or swollen, with ventral fringe of flattened stiff setae (Figs 11–13). In all species tibiae I armed with two rows of ventral spines (usually 7+7). Metatarsi I with ventral spines (usually 5+5, except 7+7 in *D. armatissimus*), which are long in females and short in males (excl. the male of *D. angustipes*, where long). Female pedipalps moderately long and slender, without apical claws. Male palpal organs rather slender. Cymbium unmodified, bulbus triangular in ventral view. Embolus prolaterally set on bulbus, tip simple or forked (Figs 14–17). In *D. angustipes*, *D. armatissimus*, *D. insignitus* and *D. phrynoides* tibial apophysis moderately slender, slightly hooked towards cymbium, with small basal flange. In *D. lineatus*, *D. lugubris*, *D. virgatus*, *D. varicus* and *D. paradoxus* tibial apophysis broader, strongly hooked, with large basal flange (Figs 18–19). Epigyne with strongly sclerotized lateral margins. Copulatory openings located anteriorly, close together or well separated. Insemination ducts proximally narrow or wide, with more or less visible distal chambers accompanied by accessory glands and connected with spermathecae through narrow channels. In some species each insemination duct with sinus as in Fig. 20.

Affinities and distribution. *Diolenius* is closely related to *Chalcolecta* Simon, 1884 and *Ohilimia* Strand, 1911 (Gardzińska and Żabka, 2005). All three genera share the following synapomorphies: legs I longest and more robust than the others, trochanters I elongate, PME and PLE on marked tubercles, embolus

partly hidden behind tegulum, tibial apophysis hooked towards cymbium, epigyne with strongly sclerotized lateral margins, insemination ducts with terminal chambers accompanied by accessory glands and connected with spermathecae through narrow channels.

The known range of *Diolenius* is restricted to tropical rain forests of New Guinea, New Britain, The Moluccas and some adjacent islands (Figs 216–217). The diversity of species suggests New Guinea to be a centre of origin of the genus. Its occurrence in neighbouring islands seems to be a consequence of past land bridges and current floristic and climatic similarities.

List of the species of *Diolenius*

1. *D. albopiceus* Hogg, 1915
2. *D. amplectens* Thorell, 1881
3. *D. angustipes* **sp. nov.**
4. *D. armatissimus* Thorell, 1881
5. *D. decorus* **sp. nov.**
6. *D. infulatus* **sp. nov.**
7. *D. insignitus* **sp. nov.**
8. *D. lineatus* **sp. nov.**
9. *D. lugubris* Thorell, 1881
10. *D. paradoxus* **sp. nov.**
11. *D. phrynoides* (Walckenaer, 1837)
12. *D. redimiculatus* **sp. nov.**
13. *D. varicus* **sp. nov.**
14. *D. virgatus* **sp. nov.**

D. carinifer Strand, 1907 = *D. armatissimus* Thorell, 1881 **syn. nov.**
D. bicinctus Simon, 1884 *nomen dubium*

Key to the species of *Diolenius*

Males

1. Trochanters I longer than tibiae I, the latter shorter than femora I, either moderately robust or swollen, always fringed. Ventral spines on metatarsi I short **2**
–. Trochanters I shorter than tibiae I, the latter longer than femora I, thin and not fringed. Ventral spines on metatarsi I long . . . . . ***D. angustipes*** sp. nov. (Figs 88–101)
2. Cephalothorax about twice longer than broad. Abdomen slightly constricted in the anterior third . . **4**
–. Cephalothorax not much longer than broad. Abdomen not constricted **3**
3. Embolus forked, with ramus **6**
–. Embolus simple, without ramus. . . . . ***D. paradoxus*** sp. nov. (Figs 209–215)
4. Metatarsi I with 7 pairs of ventral spines . . . . . ***D. armatissimus*** Thorell (Figs 43–52)
–. Metatarsi I with 5 pairs of ventral spines **5**
5. Cephalothorax with stripes of pallid hairs behind PLE. Embolus set midlaterally on bulbus . . . . . ***D. insignitus*** sp. nov. (Figs 71–77)
–. Cephalothorax without stripes. Embolus set posterolaterally on bulbus . . . . . ***D. phrynoides*** (Walckenaer) (Figs 24–34)
6. Ramus as long as embolus . . . . . ***D. lugubris*** Thorell (Figs 175–186)
–. Ramus different **7**
7. Ramus longer than embolus . . . . . ***D. varicus*** sp. nov. (Figs 202–208)
–. Ramus shorter than embolus **8**
8. Maxillae with transverse furrows . . . . . ***D. virgatus*** sp. nov. (Figs 187–201)
–. Transverse furrows missing . . . . . ***D. lineatus*** sp. nov. (Figs 151–163).

Females

1. Trochanters I longer than tibiae I, the latter shorter than femora I, moderately robust or swollen, always fringed **2**
–. Trochanters I shorter than tibiae I, the latter subequal to femora I, thin and unfringed . . . . . ***D. albopiceus*** sp. nov. (Figs 102–108)
2. Cephalothorax about twice longer than broad. Abdomen slightly constricted in the anterior third. Proximal parts of insemination ducts narrow or moderately narrow **3**
–. Cephalothorax not much longer than wide. Abdomen without constriction. Insemination ducts proximally wide **5**
3. Metatarsi I with 7 pairs of ventral spines . . . . . ***D. armatissimus*** Thorell (Figs 60–70)
–. Metatarsi I with 5 pairs of ventral spines **4**
4. Insemination ducts subparallel to each other . . . . . ***D. phrynoides*** (Thorell) (Figs 35–42)
–. Insemination ducts oblique laterally . . . . . ***D. insignitus*** sp. nov. (Figs 78–87)
5. Abdomen with two longitudinal white stripes . . . . . ***D. lineatus*** sp nov. (Figs 164–174)
–. Abdomen with transverse stripe/stripes of pallid hairs **6**
6. Proximal parts of insemination ducts very wide and lateral wings of epigyne broad **7**
–. Proximal parts of insemination ducts and lateral wings of epigyne relatively narrow **8**
7. Spermathecae large, markedly larger than distal chambers of insemination ducts, accessory glands clearly visible . . . . . ***D. amplectens*** Thorell (Figs 109–121)
–. Spermathecae relatively smaller, subequal to distal chambers of insemination ducts, accessory glands distinct . . . . . ***D. infulatus*** sp. nov. (Figs 139–150)
8. Epigynal depression trapezoid, with visible posterior edge . . . ***D. redimiculatus*** sp. nov. (Figs 134–138)
–. Epigynal depression with indistinct posterior edge . . . . . ***D. decorus*** sp. nov. (Figs 122–133).

Diolenius phrynoides (Walckenaer, 1837)
(Figs 24–42)

Attus phrynoides [*phrinoides*] Walckenaer, 1837: 479; Lucas, 1840: 379.
Attus obisioides: Doleschall 1857: 433.
Salticus obisioides: Doleschall 1859: 26.
Saltica phrynoides: Simon 1864: 336.
Diolenius phrynoides: Thorell 1870: 203, 1878: 215, 1881: 409; Hasselt 1877: 54; Koch 1881: 1240–1243; Peckham and Peckham 1886: 272; Urquhart 1897: 284; Simon 1884: 227, 1901: 480, 555–559; Petrunkevitch 1928: 186; Roewer 1954: 987; Bonnet 1956: 1474; Prószyński 1984: 33–34, 1990: 116, 2003: http://www.miiz.waw.pl/salticid/main.htm; Platnick 1989: 556, 2005: http://research.amnh.org/entomology/spiders/catalog/SALTICIDAE.html

***Material*. New Guinea**: Vogelkop: Kapaor: 1M (MCSNG, neotype – designated here), 1872, leg. L.M. D'Albertis; Pulo Faor: 1M (MCSNG), 1872, leg. L.M. D'Albertis; 1M (NHR 252/161b); Ramoi: 1F (MCSNG), 1872, leg. L.M. D'Albertis; 1 juv. (NHR 252/161a); Sekof: 1M (NMNH 5422, Kat. 1931), 1897, [identified as] *D. carinifer*, leg. S. Schädler; 1M, 2 juv. (NMNH 5423, Kat. 1931), 1896, leg. S. Schädler; 1M (NMW 12.195), [identified as] *D. carinifer*, det. E. Reimoser; 1M (MNHN 3.229, B2298); Kamakawalar (Lumira): 1F (IRSN I.G.9.223), 19.III.1929, S.A.R. le Prince Leopold, [identified as] *D. bicinctus*, det. C. Roewer. Misool (Lelintah): 1M, 1F (IRSN I.G.9.223), 26.II.1928, Rec. S.A.R. le Prince Leopold, [identified as] *D. bicinctus*, det. C. Roewer, 1938.

***Designation of neotype*.** Type specimens of *Attus phrynoides* Walckenaer (with no type locality) and of *Salticus obisioides* Doleschall are lost. Here the only specimens studied were those identified by Thorell, who saw Walckenaer's specimens, thus it was justified to designate one of the males a neotype.

***Diagnosis*.** Myrmecomorph spiders 5.75–8.50 mm long. Cephalothorax about twice longer than broad. Abdomen slightly constricted, with a transverse narrow stripe of pallid hairs. Trochanters I slender, longer than tibiae I, in males almost as long as femora I and metatarsi I. Tibiae I swollen, shorter than femora I, fringed and armed with two rows of ventral robust spines. Metatarsi I with five pairs of ventral spines. Embolus apically pointed, long, set posterolaterally on bulbus. Sperm duct with translucent sinuous meander. Tibial apophysis with a small basal flange. Lateral margins of epigyne wide and wing-shaped. Insemination ducts subparallel.

***Description*.** Male neotype from Kapaor (Figs 24–34). Cephalothorax narrow (CW about 60% CL), brown. Its dorsal surface with scattered short, translucent hairs. Ocular area black, except for AME. Eye field narrowing posteriorly (PEW < AEW). Clypeus with a few fine, whitish hairs. Chelicerae brown. Maxillae and labium brown, their anterior margins pale. Sternum elongate scutiform, pale brown with brown margins, thinly clothed in fine, short, brown hairs. Abdomen elongate-ovoid, grey, with shiny brownish scutum and dorsal transverse stripe of pallid hairs, easily rubbed off. Median spinnerets pale yellow, others orange. Pedipalps pale brown. Palpal organ as in Figs 31–34. Legs I and IV darker than others. Trochanters I much elongate, laterally compressed, brown. Tibiae I pale brown, distally yellow, fringed with brown ventral setae and armed with two rows of ventral spines. Metatarsi I with short ventral spines. Tarsi I contrastingly brown yellow. Legs IV orange, tinged brown on sides of femora, tibiae and metatarsi. Tarsi yellow. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 3.50; CW 2.20; CH 1.35; AEW 1.98; PEW 1.88; EFL 1.48; AL 4.93; AW 2.15; LI 20.68.

Size variation (n = 7). CL 3.10–3.50; CW 2.00–2.20; CH 1.28–1.35; AEW 1.85–1.98; PEW 1.80–1.90; EFL 1.35–1.50; AL 3.95–4.93; AW 1.20–2.15; LI 18.40–20.68.

Female from Ramoi (Figs 35–42). Habitus and hairiness similar to the male, colouration paler. Ocular area dark brown. Clypeus and chelicerae pale brown, the latter smaller than in male. Maxillae and labium orange with yellow anterior margins. Sternum orange, with brown margins. Abdomen yellowish grey, sparsely clothed with fine, brown hairs and with the transverse stripe of pale hairs at the constriction. Venter whitish. Spinnerets pale yellow. Epigyne as in Fig. 42. Pedipalps pale orange. Legs I pale brown, except for yellow tips of tibiae and tarsi. Trochanters I elongate, but relatively shorter than in male. Ventral spination of tibiae I and a fringe of ventral setae similar to the male. Ventral spines of metatarsi I long. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.85; CW 1.80; CH 1.10; AEW 1.65; PEW 1.60; EFL 1.20; AL 4.40; AW 2.25; LI 11.70.

Size variation (n = 3): CL 2.70–2.85; CW 1.65–1.80; CH 1.05–1.10; AEW 1.50–1.65; PEW 1.45–1.60; EFL 1.10–1.20; AL 3.05–4.40; AW 1.20–2.25; LI 10.83–11.70.

***Distribution*.** New Guinea (Western Irian): Vogelkop Peninsula, Misool (Fig. 216).

Diolenius armatissimus Thorell, 1881
(Figs 43–70)

Diolenius armatissimus Thorell, 1881: 417, 704; Simon 1884: 228; Pocock 1897: 627; Simon 1901: 476; Roewer 1954: 987; Bonnet 1956: 1473; Platnick 1989: 56, 2005: http://research.amnh.org/entomology/spiders/catalog/SALTICIDAE.html; Prószyński 1990, Cat. Salticidae: 116; 2003: http://www.miiz.waw.pl/salticid/main.htm
Diolenius (*Diolenella*) *carinifer* Strand, 1907: 568, **syn**. **nov**.; Strand 1909: 97; 1911: 180; Roewer 1954: 987; Bonnet 1956: 1474; Prószyński 1990: 116; 2003: http://www.miiz.waw.pl/salticid/main.htm

***Material*. The Moluccas**: Ternate: 1M (MCSNG, holotype), 1872, leg. O. Beccari; 1 juv. (NHR 252/1616c), det. G. Doria; 1F, 1M, 3 juv. (MCVR, vaso 236),

14–27.01.1979, coll. P. Brignoli, M. Hëlou; 1M, 1F (MCVR, vaso 237), 14–17.I.1979, coll. M. Hëlou; Bacan: 1M (MNHN 14927), coll. Simon. Halmahera: Gamkonora: 1M (BMNH 570), coll. Kükenthal; 1M (NMW 12.194), [identified as] *D. carinifer*.

Diagnosis. Myrmecomorph spiders 5.40–6.90 long. Compared to *D. phrynoides* metatarsi I with 7 (not 5) pairs of ventral spines. Embolus shorter, set midlaterally on bulbus. Insemination ducts oblique laterally.

Description. Male holotype (Figs 43–52). Cephalothorax brown, covered with scattered short, translucent hairs. Ocular area black, except for AME. Clypeus brown, with few fine, whitish hairs. Chelicerae, maxillae and labium dark orange, with paler anterior margins. Sternum elongate, orange, with brown margins, thinly clothed with fine, short, brown hairs. Abdomen lighter than cephalothorax, with shiny scutum and a dorsal transverse stripe of pallid hairs, easily rubbed off. Spinnerets yellow. Pedipalps orange. Embolus moderately long, set midlaterally on bulbus. Sperm duct as in Figs 49, 51. Tibial apophysis slightly hooked towards the cymbium, with a small basal flange. Legs I pale brown, others yellow with femora, patellae, tibiae and metatarsi dark brown on sides. Tibiae I swollen, distally yellow, with ventral spines and a fringe of brown setae. Metatarsi I armed with short ventral spines. Tarsi I brown with yellow tips. Leg I spination: t: 7+7, m: 7+7. Dimensions: CL 3.15; CW 1.90; CH 1.20; AEW 1.53; PEW 1.45; EFL 1.25; AL 3.75; AW 1.65; LI 19.18.

Size variation (n = 4): CL 3.00–3.25; CW 1.75–2.00; CH 1.15–1.25; AEW 1.53–1.60; PEW 1.45–1.55; EFL 1.20–1.35; AL 3.30–3.75; AW 1.30–1.85; LI 15.85–19.18.

Female from Ternate – newly described (Figs 60–70). Habitus similar to the male, colouration brighter. Cephalothorax sparsely covered with fine, shiny translucent hairs. Ocular area black, except for AME. Clypeus orange, chelicerae similar in colour, smaller than in male. Maxillae and labium light orange, with yellow anterior margins. Sternum yellow-orange, with brown margins. Abdomen pale yellow, sparsely clothed with brown, fine hairs and transverse stripe of pallid hairs at the constriction. Venter whitish. Spinnerets pale yellow. Insemination ducts oblique laterally, spermathecae large, pear-shaped (Figs 64–65). Posterior edge of epigyne sinuous, side margins wide and wing-shaped. Legs I and IV darker than others. Lateral sides and joints of legs II-IV more pigmented. Legs I orange except for yellow tarsi and tips of tibiae. Trochanters I elongate, but relatively shorter than in male. Ventral spination and fringe on tibiae I similar to the male. Ventral spines on metatarsus I long and sharp. Leg I spination: t: 7+7, m:7+7. Dimensions: CL 2.55; CW 1.50; CH 0.95; AEW 1.40; PEW 1.30; EFL 1.15; AL. 2.90; AW 1.30; LI 10.40.

Distribution. The Moluccas: Halmahera, Ternate, Bacan, Seram (Fig. 216).

Remarks. Type specimen of *Diolenius carinifer* is lost. However, the comparison of its original description (Strand 1907) with the holotype of *D. armatissimus* Th. proved *D. carinifer* to be a synonym of *D. armatissimus*.

Diolenius insignitus sp. nov.
(Figs 71–87)

Etymology. From colour pattern: *insignitus* (Lat.) = marked, decorated.

Material. **The Moluccas**: Ambon: Liang: 1F (MCVR, vaso 237, holotype), 3F, 5 juv. (MCVR, vaso 237, paratypes), 16–30.I.1979, coll. P. Brignoli; 1F (NMNH 5459 kat. 1339), III.1921, [identified as] *D. armatissimus*, coll. Zapstein; Edkor: 1M (MNHN 7184), [identified as] *D. bicinctus*.

Diagnosis. Myrmecomorph spiders 4.15–5.15 mm long, similar to *D. armatissimus* but metatarsi I with five pairs of ventral spines, femora I more robust, pars thoracica of cephalothorax with side patches of pallid hairs, abdomen with anterior and posterior white hairs and broad stripe of hairs in its widest part. Accessory glands relatively larger and channels of insemination ducts wider.

Description. Female holotype (Figs 78–87). Cephalothorax brown, clothed in fine, shiny, translucent hairs, more numerous on eye field. On sides of cephalothorax elongate patches of pallid hairs. Ocular area of ALE, PME and PLE black. Clypeus, chelicerae, maxillae and labium pale brown, with yellow anterior margins. Sternum orange. Abdomen ovoid, yellowish grey, with lighter hairy pattern. Venter pale grey. Spinnerets yellow. Epigynal insemination ducts oblique to each other, spermathecae pear-shaped (Figs 81–82). Legs I orange, except for yellow patellae and tips of tibiae. Other legs yellow, with brown pigmented dorsolateral surface of femora and lateral sides of other podomeres. Trochanters I longer than coxae I, but shorter than femora I (about 60 % of femora I length). Ventral setae of tibiae I more numerous distally. Ventral metatarsal spines long. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.20; CW 1.40; CH 1.00; AEW 1.40; PEW 1.35; EFL 1.15; AL 2.28; AW 1.30; LI 8.73.

Size variation (n = 3): CL 2.15–2.40; CW 1.35–1.45; CH 1.00–1.08; AEW 1.25–1.40; PEW 1.20–1.35; EFL 1.00–1.15; AL 2.25–2.75; AW 1.25–1.50; LI 8.50–9.85.

Male from Ambon (Figs 71–77). Cephalothorax dark brown, with side patches of pallid hairs. Clypeus, maxillae, maxillae and labium paler than dorsal surface of cephalothorax. Sternum brown, with white fine marginal hairs. Abdomen grey, with orange

dorsal scutum and with pattern of whitish hairs, easily rubbed off. Venter with yellow scutum. Spinnerets yellowish. Pedipalps (Figs 76–77) pale brown. Embolus moderately long, set midlaterally on bulbus. Sperm duct slightly meandering. Legs I brown, except for yellow patellae and tips of tibiae. Others yellow, with brown pigmented dorsolateral surface of femora and lateral sides of other podomeres. Trochanters I long (> 80% of length of femora I). Ventral spines on metatarsi I short. Leg I spination: t: 7+7, m: 5+5. Dimensions. CL 2.05; CW 1.35; CH 0.90; AEW 1.35; PEW 1.20; EFL 1.00; AL. 2.10; AW 1.15; LI: 10.10.

Distribution. The Moluccas: Ambon, Bacan, Edkor (Fig. 216).

Diolenius angustipes sp. nov.
(Figs 88–101)

Etymology. From slender shape of legs I; *angustus* (Lat.) – slender, *pes* – leg.

Material. **Biak**: Bosnik: 1M (MCVR, vaso 236, holotype), 13.VII.1984, coll. P. Brignoli.

Diagnosis. Myrmecomorph spider about 5 mm long. Compared to *D. phrynoides*, *D. armatissimus* and *D. insignitus* trochanters I shorter (<60% of length of femora I), tibiae I longer (longer than femora I), thin and with no ventral fringe. Spines on metatarsi I long. Sperm duct slightly meandering.

Description. Male holotype (Figs 88–101). Cephalothorax narrow (CW = 62% CL), brown, sparsely clothed in fine, short, pallid hairs, more numerous on sides. Ocular area black, except of AME. Eye field narrowing posteriorly (PEW < AEW). Clypeus, chelicerae and maxillae pale brown, labium darker. Sternum orange, covered with sparse, short, brown hairs. Abdomen constricted in anterior third, pale brownish grey, sparsely clothed in short, brown hairs. Scutum shiny, yellowish brown. Spinnerets yellowish. Pedipalps pale brown. Embolus rather long, pointed, posterolaterally set on bulbus, tibial apophysis moderately slender and slightly hooked, with small basal flange (Figs 94–96). Legs I pale brown, only tarsi yellowish. Other legs orange, lateral sides of podomeres darker, patellae and tarsi yellow. Trochanters I cylindrical, longer than coxae I but shorter than femora I (58%) and tibiae I (56%). Tibiae I long and slender (longer than femora I), armed with two rows of ventral spines. Metatarsi I with long, ventral spines. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.20; CW 1.45; CH 0.90; AEW 1.40; PEW 1.25; EFL 1.05; AL. 2.58; AW 1.15; LI 12.56.

Female unknown.

Distribution. Biak Island (N of New Guinea) (Fig. 216).

Diolenius albopiceus Hogg, 1915
(Figs 102–108)

Diolenius albopiceus Hogg, 1915: 504–505; Roewer 1954: 988; Bonnet 1956: 1473; Prószyński 1990: 116, 2003: http://www.miiz.waw.pl/salticid/main.htm, Platnick 2005: http://research.amnh.org/entomology/spiders/catalog/SALTICIDAE.html

Material. **New Guinea**: Dutch New Guinea: 1F (BMNH 1921.3.24.127, holotype), Wollaston Exp. Papua: Matkomrae Village: 1F (AMS KS 44914), 5.X.1993, approx 50 km N of Kiunga, coll. M.S. Moulds, S. Cowan.

Diagnosis. Tibiae I thin and elongate (subequal to femora I length). Compared to *D. angustipes* cephalothorax and abdomen with transverse bands of whitish hairs on darker background (Fig. 102). Copulatory openings of epigyne close together, proximal parts of insemination ducts oblique laterally.

Description. Female holotype (Figs 102–107). Cephalothorax dark brown, clothed in whitish fine hairs as in Fig. 102. Ocular area black, except for AME. Clypeus and chelicerae brown. Maxillae and labium similar, with yellow tips. Sternum light brown. Abdomen yellowish grey, with two transverse bands of whitish hairs, posterior part also white haired. Venter yellowish with two indistinct rows of grey spots. Spinnerets pale yellow. Epigyne (Fig. 107) with copulatory openings almost adjoining to each other. Insemination ducts proximally slender, leading to oval chambers. The latter connected with pear-shaped spermathecae through channel-like ducts. Legs I brown, with yellowish tarsi. Others legs orange with darker sides, patellae and tarsi yellow. Ventral spines on metatarsi I long. Leg I spination: t: 7+6-7, m: 5+5. Dimensions: CL 2.65; CW 1.85; CH 1.15; AEW 1.65; PEW 1.65; EFL 1.25; AL. 3.45; AW 1.75; LI 10.30.

Size variation (n = 2): CL 2.65–2.70; CW 1.85; CH 1.15; AEW 1.65; PEW 1.65; EFL 1.25–1.30; AL. 2.90–3.45; AW 1.40–1.75; LI 10.10–10.30.

Male unknown.

Distribution. New Guinea: Western Irian, Papua: Western Province (Fig. 216).

Diolenius amplectens Thorell, 1881
(Figs 109–121)

Diolenius amplectens Thorell, 1881: 414, 704; Simon 1901: 477; Strand 1911: 179; Roewer 1954: 988; Bonnet 1956: 1473; Chrysanthus: 1968: 51–53; Prószyński 1990: 116, 2003: http://www.miiz.waw.pl/salticid/main.htm; Platnick 1998: 875, 2005: http://research.amnh.org/entomology/spiders/catalog/SALTICIDAE.html

Material. **New Guinea** (Western Irian): Ramoi: 1F (MCSNG, lectotype), 1872, leg. L.M. D'Albertis; Sorong: 1F (MCVR, vaso 250), 19.VII.1984, leg. P. Brignoli; 1F (MNHN B.2298); Aru: Wokam: 1F (MCSNG,

paralectotype), 1872, leg. O. Beccari; Trangan: 2M (SMF 2449), 1908, H. Merton.

Diagnosis. Spiders about 6 mm long. Compared to *D. albopiceus* cephalothorax broader (CW ≈ 70% CL). Abdomen with indistinct transverse pale stripes. Tibiae I heavily swollen. Lateral margins of epigyne wide, wing-shaped. Spermathecae large, pear-shaped. Proximal parts of insemination ducts very wide, sinuses rather indistinct, spermathecae clearly translucent through integument.

Description. Female lectotype (Figs 109–116). Cephalothorax brown, sparsely covered with fine, shiny, translucent hairs. Ocular area dark brown. Eye field rectangular. Clypeus light brown, chelicerae similar in colour. Maxillae and labium orange with yellow anterior margins. Sternum pale orange, its margins dark with fine, whitish hairs. Abdomen large, ovoid, yellow greyish, with brown patch in anterior part and with indistinct transverse bent stripes made of pigmentation and fine pallid hairs. Spinnerets yellow. Epigyne as in Figs 115–116. Legs I pale brown, with orange patellae and tips of tibiae; tarsi yellow. Other legs yellow, with orange lateral sides of podomeres. Femora I moderately robust. Tibiae I swollen, clothed in very fine, shiny, pallid hairs and armed with strong, ventral spines; ventral setae not very numerous. Ventral spines on metatarsi I long and sharp. Leg I spination: t: 7+7, I: 5+5. Dimensions: CL 2.50; CW 1.85; CH 1.10; AEW 1.60; PEW 1.60; EFL 1.25; AL. 3.75; AW 1.95; LI 10.65.

Male unknown.

Distribution. New Guinea (Western Irian), Aru Islands (Fig. 217).

Diolenius decorus sp. nov.
(Figs 122–133)

Etymology. From colour pattern: *decorus* (Lat.) = ornamented.

Material. **New Guinea** (Papua): Brown River (Central Province): 1F (QMB S69055, holotype), 1F (QMB S69056, paratype), lowland rainforest, 29.VI.1988, coll. D. J. Court.

Diagnosis. Spiders 3.65–3.75 mm long. Compared to *D. amplectens* cephalothorax with a transverse band of pallid, fine hairs and two abdominal narrow stripes placed close together. Epigyne bordered with sclerotized lateral margins, but wide wings missing. Posterior edge of epigynal depression indistinct. Insemination ducts shorter and narrower, leading to well separated, flattened chambers. Spermathecae relatively smaller, pear-shaped.

Description. Female holotype (Figs 122–133). Cephalothorax not much longer than wide, dark brown, clothed in fine, shiny, pallid hairs making transverse band behind PLE. Ocular area of ALE, PME and PLE black. Clypeus brown with a few fine hairs. Chelicerae light brown. Maxillae and labium pale brown, with yellow anterior margins. Sternum orange, with pallid hairs on dark margins. Abdomen ovoid, grey and "velvety", clothed in pearl hairs, more numerous medially, forming two narrow curved stripes. Venter pale grey. Spinnerets relatively long, yellow. Epigyne as in Figs 127–128. Pedipalps orange, with yellow tibiae and tarsi. Legs I orange, with yellow patellae and tips of tibiae and tarsi. Other legs yellow, with brown dorsolateral and lateral markings. Femora I moderately robust, patellae I rather short and robust. Tibiae I swollen, armed with strong, ventral spines and ventral setae. Ventral spines on metatarsi I long. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 1.75; CW 1.30; CH 0.80; AEW 1.20; PEW 1.25; EFL 0.95; AL 1.90; AW 1.05; LI 6.38.

Size variation (n = 2): CL 1.75-1.80; CW 1.30; CH 0.80-0.83; AEW 1.20-1.25; PEW 1.25; EFL 0.95-1.10; AL 1.90-1.95; AW 1.05-1.15; LI 6.38-6.45.

Male unknown.

Distribution. Papua New Guinea: Central Province (Fig. 217).

Diolenius redimiculatus sp. nov.
(Figs 134–138)

Etymology. From *redimiculum* (Lat.) = stripe, band.

Material. **New Guinea** (Papua): Matkomrae Village (Western Province): 1F (AMS KS44911, holotype), 50 km N of Kiunga, 4.X.1993, coll. M. Moulds, S. Cowan; **Mindiptana**: 2F (NMNH 8488, paratypes), 1958–65 [identified as] *D. amplectens*.

Diagnosis. Spiders 5.25–5.60 mm long. Compared to *D. decorus*, white band on cephalothorax missing, abdominal stripes of pallid hairs well separated, epigyne trapezoid, bordered by sclerotized margins. Posterior edge of epigynal depression clearly marked. Sinus of insemination ducts visible.

Description. Female holotype (Figs 134–138). Cephalothorax not much longer than wide, brown, sparsely clothed in fine, shiny, translucent hairs. Ocular area of lateral eyes I, II and III almost black. Eye field rectangular. Clypeus, chelicerae, maxillae and labium light brown. Sternum orange, with pallid hairs on dark margins. Abdomen ovoid, dorsally yellowish grey, clothed in pallid hairs, more numerous in anterior and medial parts, forming two narrow stripes. Venter greyish with two longitudinal rows of grey spots. Spinnerets yellowish. Epigyne (Figs 137–138) trapezoid, side margins sclerotized, but not wide. Legs I light brown, with yellow patellae and tips of tibiae and tarsi. Other legs pale orange, with brown dorsolateral and lateral markings; tarsi always yellow. Femora I moderately robust, tibiae I swollen, armed with strong ventral spines and

with ventral fringe. Ventral spines on metatarsus I long. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.35; CW 1.70; CH 1.10; AEW 1.50; PEW 1.50; EFL 1.25; AL 3.25; AW 2.35; LI: 9.90.

Size variation (n = 3): CL 2.35–2.55; CW 1.70–1.80; CH 1.10–1.15; AEW 1.50–1.60; PEW 1.50–1.60; EFL 1.20–1.25; AL 2.70–3.25; AW 1.50–2.35; LI: 9.90.

Male unknown.

Distribution. New Guinea: Papua: Western Province, Western Irian: Mindiptana (Fig. 217).

Diolenius infulatus sp. nov.
(Figs 139–150)

Etymology. From transverse, pallid stripe on abdomen: *infula* (Lat.) = band, stripe.

Material. **New Guinea** (Papua): Wau (Morobe Province): 1F (QMB S69057, holotype), 1juv. (QMB S69058, paratype), Wau Ecol. Inst., Mount Mission 1350 m, 7.VII.1988, coll. D. J. Court; Karawari Lodge (East Sepik Province): 1F (QMB S69059), 8.VII.1986, coll. D. J. Court; **New Britain**: 1F (BMNH 98.12.5.58), G. Willey, [identified as] *D. lugubris*.

Diagnosis. Spiders about 5 mm long. Abdomen with wide, transverse, light stripe and pattern of dark mottling and paler dorsal markings. Compared to the other species patellae I robust and tibiae I swollen, the latter with numerous, flattened ventral setae, forming a stiff crest between rows of ventral spines. Proximal parts of insemination ducts very wide.

Description. Female holotype (Figs 139–150). Cephalothorax dark brown, sparsely clothed in short pallid hairs, more numerous on sides, behind PLE and posteriorly. Ocular area black. Eye field trapezoid, widening posteriorly. Clypeus and chelicerae brown, maxillae and labium similar in colour, with light anterior margins. Sternum brown. Abdomen cylindrical, dark grey, in anterior part sooty, with pattern of dark mottling and paler markings and with wide, transverse, light stripe. Venter grey, paler than dorsal surface. Spinnerets yellowish grey. Epigynal margins wide, wing-shaped. Insemination ducts proximally wide, join relatively small pear-shaped spermathecae via narrow ducts (Figs 144–145). Pedipalps brown, with yellow tarsi. Legs I brown, with orange patellae and tarsi. Tibiae I dark brown, distally orange. Other legs orange, with brown femora and brown lateral surfaces of patellae, tibiae and metatarsi. Tibiae I heavily fringed and armed with strong, ventral spines. Ventral spines on metatarsi I long and sharp. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.25; CW 1.70; CH 0.95; AEW 1.40; PEW 1.55; EFL 1.10; AL. 2.95; AW 1.50; LI 8.20.

Size variation (n = 3): CL 2.20–2.25; CW 1.60–1.70; CH 0.95–1.00; AEW 1.40–1.55; PEW 1.55–1.60; EFL 1.00–1.20; AL. 2.75–2.95; AW 1.50–1.75; LI 8.20–8.40.

Male unknown.

Distribution. Papua New Guinea: Morobe Province, Eastern Sepik Province; New Britain (Fig. 217).

Diolenius lineatus sp. nov.
(Figs 151–174)

Etymology. From abdominal pattern: *linea* (Lat.) = stripe.

Material. **New Guinea** (Papua): Musgrave River (Central Province): 1M (QMB S69060, holotype), 1F (QMB S69061, allotype) 1M, 3F (QMB S69062, paratypes), Awarere plantation, 300 m, rainforest remnants, 3.VII.1988, coll. D. J. Court, M. Żabka; 2M (QMB S69063), 25 km from Sogeri, 24.09.1985, coll. D. J. Court; 1F (QMB S69064), lowland rainforest, foliage, 3.VII.1988, coll. D. J. Court, M. Żabka; Brown River (Central Province): 1F, 1 juv. (QMB S69065), lowland rainforest, foliage, 13.VII.1988, coll. M. Żabka; 1F, 1 juv. (QMB S69066), lowland rainforest, 16.VII.1988, coll. D. J. Court, M. Żabka; Crystal Rapids: 1F (QMB S69067), rainforest near Sogeri, 25.VII.1985, coll. J. W. Ismay; Nomad River: 1F (IZPAN), coll. W. Kulczyński.

Diagnosis. Spiders 5.60–6.70 mm long. Abdomen with two longitudinal stripes of pallid, shiny hairs on dorsal and ventral surfaces. Trochanters I heavily elongate (19% LI). Tibiae I cylindrical (not swollen), with dorsal band of pallid hairs, passing across to patellae. Translucent part of sperm duct "C"-shaped, tibial apophysis broad and strongly hooked, with large basal flange, embolus with short ramus. Sinuses of insemination ducts present.

Description. Male holotype (Figs 151–163). Cephalothorax not much longer than wide, dark brown, covered with scattered short, translucent hairs, more numerous behind PLE. Ocular area of ALE, PME and PLE black. Eye field trapezoid (PEW > AEW). Clypeus lighter than dorsal surface of cephalothorax. Chelicerae, maxillae and labium brown, anterior margins of maxillae and labium paler. Sternum light brown, scutiform, with pallid hairs on brown margins. Abdomen elongate, cylindrical, greyish, with light brown dorsal and ventral scuta, sparsely clothed in brown, short hairs. Sides of scuta with longitudinal stripes of pallid, shiny hairs. Spinnerets yellow. Pedipalps (Figs 157–160) pale brown. Embolus long, posterolaterally set, with short ramus. Tibial apophysis broad and strongly hooked towards the cymbium, with the large basal flange. Sperm duct meandering as in Figs 157–160. Legs I brown with yellow tarsi. Other legs yellow, with brown lateral femora, patellae, tibiae and metatarsi. Trochanters I heavily elongate, laterally flattened, almost equal in length to femora I (90%) and longer than tibiae I. Patellae I rather slender. Tibiae I cylindrical, brown, setae of ventral fringe not numerous. Dorsal tibiae I with longitudinal band of pallid

hairs, usually rubbed off. Metatarsi I with short ventral spines. Leg I spination: t: 7+7, m:5+5. Dimensions: CL 2.45; CW 1.85; CH 1.10; AEW 1.53; PEW 1.55; EFL 1.20; AL 3.30; AW 1.35; LI: 14.95.

Size variation (n = 3). CL 2.45–2.60; CW 1.85–2.00; CH 1.10–1.25; AEW 1.53–1.60; PEW 1.55–1.65; EFL 1.20–1.35; AL 3.30–3.85; AW 1.20–1.35; LI 14.95–18.65.

Female allotype (Figs 164–174). Cephalothorax brown with scattered short, translucent hairs. Ocular area of lateral eyes I, II and III black. Eye field trapezoid. Clypeus lighter than dorsal cephalothorax, thinly covered with sparse hairs. Chelicerae, maxillae and labium light brown, anterior margins of maxillae and labium paler. Sternum orange, with pallid hairs on brown margins. Abdomen ovoid (in other specimens ovoid or cylindrical), pale grey, with longitudinal central brown stripe, sparsely clothed in short, brown hairs and with two longitudinal side stripes of pallid, shiny hairs. Venter yellowish, with two longitudinal lateral stripes of pallid hairs. Spinnerets greyish, except medians pale yellow. Epigyne (Figs 170–171) with well marked wing-shaped lateral margins. Spermathecae oval, connected with pear-shaped spermathecae through narrow ducts. Sinus of each insemination duct present. Legs I brown with yellow tarsi. Other legs yellow (IV pair darker), with brown lateral surfaces of femora, patellae, tibiae and metatarsi. Trochanters I relatively shorter than in male (about 70% of femora I length and 70% of tibiae I length). Ventral spination of tibiae I and fringe of ventral setae similar to the male. Metatarsi I armed with long ventral spines. Leg I spination: t: 7+7, metatarsi 5+5. Dimensions: CL 2.65; CW 1.93; CH 1.25; AEW 1.60; PEW 1.65; EFL 1.30; AL 4.05; AW 2.25; LI 11.50.

Size variation (n = 6): CL 2.55–2.65; CW 1.90–2.00; CH 1.20–1.30; AEW 1.58–1.70; PEW 1.65–1.77; EFL 1.30–1.35; AL 3.05–4.05; AW 1.30–2.25; LI 11.00–12.50.

Distribution. Papua New Guinea: Western and Central Provinces (Fig. 217).

Diolenius lugubris Thorell, 1881
(Figs 175–186)

Diolenius lugubris Thorell, 1881: 414, 704; Simon 1884: 227, 1901: 477; Pocock, 1899: 115; Roewer 1954: 988; Bonnet 1956: 1474; Prószyński 1990: 116; 2003: http://www.miiz.waw.pl/salticid/main.htm; 2005: http://research.amnh.org/entomology/spiders/catalog /SALTICIDAE.html

Material. **New Guinea** (Western Irian): Ramoi: 1M (MCSNG, holotype), 1872, leg. L.M. D'Albertis; Papua: Ok Tedi: 1M (AMS KS 56384), XI.1998, coll. M. Moulds; Mindiptana: 3M (NMNH 8488), 1956–65, [identified as] *D. amplectens*, det. F. Chrysanthus.

Diagnosis. Spiders about 6 mm long. Compared to similar *D. lineatus*, ramus almost as long as embolus.

Description. Male holotype (Figs 175–182). Cephalothorax dark brown. Ocular area black. Eye field rectangular (PEW = AEW). Clypeus lighter than dorsal surface of cephalothorax, thinly covered with sparse, whitish, fine hairs. Chelicerae, maxillae and labium brown, with anterior margins of maxillae and labial tip paler. Sternum brown, scutiform. Abdomen cylindrical, dark grey, with almost black dorsal and ventral scuta, clothed in black, short hairs. Sides of scuta with longitudinal stripes of pallid, shiny hairs, largely rubbed off (in original description of freshly collected specimen longitudinal stripes of pallid hairs present). Spinnerets greyish orange. Pedipalps (Figs 181–182) brown. Embolus long, set posterolaterally, ramus as long as embolus. Translucent part of sperm duct makes anterior loop. Tibial apophysis broad and strongly hooked, with a large basal flange. Legs I dark brown with yellow tarsi, tarsus-metatarsus joint area brown. Other legs orange, with blackish lateral surfaces of femora, patellae, tibiae and metatarsi. Trochanters I very elongate, subequal in length to femora I and tibiae I. Patellae I rather slender. Tibiae I cylindrical, armed with ventral spines and with ventral setae. Dorsal surface of tibiae I with stripe of pallid hairs, usually rubbed off. Metatarsi I armed with short ventral spines. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.55; CW 1.85; CH 1.20; AEW 1.60; PEW 1.60; EFL 1.30; AL 3.35; AW 1.40; LI 15.14.

Size variation (n = 3): CL 2.55–2.70; CW 1.85–2.00; CH 1.20; AEW 1.60–1.70; PEW 1.60–1.70; EFL 1.25–1.30; AL 3.25–3.35; AW 0.95–1.40; LI 13.50–15.14.

Female unknown.

Distribution. New Guinea: Western Irian: Vogelkop Peninsula; Papua: Western Province (Fig. 217).

Diolenius virgatus sp. nov.
(Figs 187–201)

Etymology. From *virga* (Lat.): stripe, *virgatus* – striped.

Material. **New Guinea** (Papua): Goldie River (Central Province): 1M (QMB S69068, holotype), 1M (QMB S69069, paratype), 14.VII.1987, coll. D. J. Court, M. Żabka.

Diagnosis. Spiders 4–5.5 mm long. Cephalothorax with transverse stripes of numerous whitish hairs behind PME, PLE and in posterior part. Compared to *D. lineatus* and *D. lugubris*, maxillae with transverse furrows, trochanters I shorter than femora and tibiae I, patellae and tibiae I more robust, ventral fringe of tibiae I and patellae I stiff and more numerous, ramus of embolus wider, sperm duct sinuous. Dorsal surface of cymbium and palpal tibia covered with scale-like white hairs.

Description. Male holotype (Figs 187–201). Cephalothorax dark brown, covered with scattered short, whitish hairs, more numerous posteriorly and behind

PME, PLE. Ocular area of ALE, PME and PLE black. Eye field rectangular (PEW = AEW). Clypeus lighter than dorsal surface of cephalothorax, thinly covered with sparse hairs. Chelicerae, maxillae and labium brown; maxillae with transverse furrows (Figs 191, 200). Sternum brown, scutiform, with pallid hairs covering darker margins. Abdomen elongate, brownish grey, with brown dorsal and ventral scuta, sparsely clothed in brown, short hairs and with two longitudinal stripes of white, shiny hairs on sides of the scuta. Spinnerets greyish yellow. Pedipalps (Figs 193–196) light brown cymbium and tibia dorsally covered with scale-like, white hairs. Embolus long, set posterolaterally; ramus wide and short (shorter than embolus). Tibial apophysis broad and strongly hooked, with a large basal flange. sperm duct meandering as in Figs 193, 195, 196. Legs I brown with yellow tarsi. Other legs orange with brown lateral surfaces of femora, patellae, tibiae and metatarsi. Trochanters I shorter than femora I (about 70%) and tibiae I (about 80%). Femora I laterally flattened, curved. Patellae I relatively short and robust. Tibiae I cylindrical, not swollen, armed with two rows of ventral spines. Tibiae and patellae I with numerous and stiff ventral setae. Metatarsi I armed with short, ventral spines. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.30; CW 1.70; CH 1.20; AEW 1.50; PEW 1.50; EFL 1.15; AL 3.00; AW 1.25; LI 11.85.

Size variation (n = 2): CL 1.85–2.30; CW 1.35–1.70; CH 1.00–1.20; AEW 1.30–1.50; PEW 1.30–1.50; EFL 1.00–1.15; AL 2.30–3.00; AW 1.18–1.25; LI 8.60–11.85.

Female unknown.

Distribution. Papua New Guinea: Central Province (Fig. 217).

Diolenius varicus sp. nov.
(Figs 202–208)

Etymology. From the shape of embolus: *varicus* (Lat.) – forked.

Material. **New Guinea**: Astrolabe Bay (Madang Province): 1M (ZMB, Kat. No 7111, holotype), 1896–97, coll. Dahl; 1M (ZMB, Kat. No 18126, paratype), 1896–97, coll. Dahl; 2M (ZMB, Kat. No 18125, paratypes), 1896–97, coll. Dahl; Ralum: 1M (ZMB, Kat. No 18120), IV. 1896, coll. Dahl; Ralum Sowa: 1M, 1 juv. (ZMB, Kat. No 18121), 7.VI.1896, coll. Dahl; Ralum Lowon: 1M (ZMB, Kat. No 18122), 16.IX.1897, coll. Dahl; 1M (ZMB, Kat. No 18123), 11.VI.1896, coll. Dahl; Wunakokus: 1M (ZMB, Kat. No 18119), 600 m, auf Pflanzen, 28.II.1897, coll. Dahl; Kabakaul Lamellalina: 1M (ZMB, Kat. No 18118), 1896–97, coll. Dahl; 1 juv. (ZMB, Kat. No 18117), 1896–97, coll. Dahl; Finschafen: 1M (ZMB, 18127), 1896–97, coll. Dahl.

Diagnosis. Spiders 7 mm long. Compared to *D. lineatus*, *D. lugubris* and *D. virgatus* ramus elongate (longer than embolus).

Description. Male holotype (Figs 202–208). Cephalothorax brown, covered with scattered short, translucent hairs, more numerous behind PLE. Ocular area almost black. Eye field trapezoid (PEW > AEW). Clypeus brown, thinly covered with sparse, pallid hairs. Chelicerae brown, typical. Maxillae and labium orange, with anterior margins paler. Sternum orange, scutiform, with pallid hairs covered brown margins. Abdomen elongate, greyish orange, with light brown dorsal and ventral scuta and stripes of pallid hairs largely rubbed off. Spinnerets yellowish. Pedipalps (Figs 207–208) orange. Ramus of embolus much elongate. Sperm duct makes the prolaterally convex loop in anterior part of tegulum. Tibial apophysis broad and strongly hooked, with a large basal flange. Legs I light brown with yellow tarsi. Other legs yellow, with brown lateral surfaces of femora, patellae, tibiae and metatarsi. Trochanters I shorter than femora I (about 70%) and tibiae I (about 80%). Tibiae I cylindrical, not swollen, with retroventral spines markedly smaller than proventrals. Metatarsi I armed with short ventral spines. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 2.75; CW 2.10; CH 1.40; AEW 1.80; PEW 1.85; EFL 1.45; AL 4.15; AW 1.65; LI 16.95.

Size variation (n = 5): CL 2.55–2.75; CW 1.85–2.10; CH 1.15–1.45; AEW 1.65–1.80; PEW 1.70–1.85; EFL 1.15–1.45; AL 2.75–4.20; AW 1.00–1.65; LI 14.23–16.95.

Female unknown.

Distribution. Papua New Guinea: Madang and Morobe Provinces (Fig. 217).

Diolenius paradoxus sp. nov.
(Figs 209–215)

Etymology. From *paradoxus* (Lat.) = strange, paradoxical.

Material. **New Guinea**: Tami-Mundang: 1M (ZMB, Kat No 18124, 38, holotype), IV.1910, [identified as] *D. phrynoides*, coll. L. Schültze.

Diagnosis. Compared to *D. phrynoides* cephalothorax broader (CW > 70% CL), abdomen not constricted, tibial apophysis of palpal organ broad and strongly hooked. Compared to *D. lineatus*, *D. lugubris*, *D. virgatus* and *D. varicus* tibiae I heavily swollen, embolus simple, without ramus.

Description. Male holotype (Figs 209–215). Cephalothorax light brown, covered with scattered short, pallid hairs, more numerous behind PLE. Ocular area black. Clypeus orange, thinly covered with sparse, pallid hairs. Chelicerae paler, typical. Maxillae yellow; labium considerably darker, with yellow anterior margins. Sternum light orange, scutiform. Abdomen elongate, greyish, with light brown dorsal and ventral scuta. Spinnerets rather short, yellowish. Pedipalps (Figs 214–215) orange. Sperm duct slightly meandering.

Tibial apophysis broad and strongly hooked, with rather large basal flange. Legs I brown, paler than cephalothorax. Legs II, III yellowish, IV – orange, all with brown lateral sides of femora, tibiae and metatarsi. Tibiae I swollen, with two rows of ventral spines and fringe of brown, flattened setae, forming a stiff crest. Metatarsi I armed with short ventral spines. Leg I spination: t: 7+7, m: 5+5. Dimensions: CL 3.00; CW 2.38; CH 1.35; AEW 1.85; PEW 1.90; EFL 1.50; AL.3.85; AW 1.55; LI: 15.45.

Female unknown.

Distribution. Papua New Guinea: Morobe Province (Fig. 216).

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REFERENCES

Berland, L. 1932. Les Arachnides. Encyclopédie Entomologique. Série A, XVI, 485 pp.

Bonnet, P. 1956. Bibliographia Araneorum. Analyse méthodique de toute la litérature aranéologique jusqu'en 1939. Toulouse: Les Freres Douladoure, II(2): 919–1926.

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

Chrysanthus, P. 1968. Spiders from South New Guinea. X. Tijdschrift voor entomologie, uitgegeven door de Nederlandsche Entomologische Vereeniging, 3: 49–74.

Doleschall, C. L. 1857. Bijdrage tot de Kennis der Arachniden van den Indischen Archipelago. Natuurwetenschappelijk Tijdschrift voor Nederlandsch-Indie, 13: 339–434.

Doleschall, C. L. 1859. Tweede Bijdrage tot de Kennis der Arachniden van den Indischen Archipelago. Acta Societatis scientiarum indo-neerlandicae, 5(5): 1–60.

Gardzińska, J. and M. Żabka 2005. A revision of the spider genus *Chalcolecta* Simon, 1884 (Araneae: Salticidae). Annales Zoologici, 55(3): 437–448.

Hasselt, A. W. M. van. 1877. Araneae exoticae, quas coll. Doleschall ex India orient. Tijdschrift voor entomologie, uitgegeven door de Nederlandsche Entomologische Vereeniging, 20: 51–56.

Hogg, H. 1915. On Spiders of the Family Salticidae collected by the British Ornithologists` Union Expedition and the Wollaston Expedition in Dutch New Guinea. Proceedings of the Zoological Society of London, 501–528.

Keyserling, E. 1883. Die Arachniden Australiens nach der Natur beschrieben und abgebildet. Verlag von Bauer and Raspe, 1: 1421–1489.

Koch, L. 1881. Die Arachniden Australiens. 1. Verlag von Bauer and Raspe, 1: 1213–1271.

Lucas, H. 1840. Histoire Naturelle des Crustacées, des Arachnides et des Insectes, 1: 334–467.

Neave, S. A. 1939. Nomenclature Zoologicus. II. Zoological Society of London, 1025 pp.

Peckham, G. W., E. G. Peckham 1886. On the genera of the family Attidae. Transactions of the Connecticut Academy of Arts and Sciences, 4: 255–342.

Petrunkevitch, A. 1928. Systema Aranearum. Transactions of the Connecticut Academy of Arts and Sciences, 29: 1–270.

Platnick, N. I. 1989. Advances in Spider Taxonomy 1981–1987. A Supplement to Brignoli's: A Catalogue of the Araneae described between 1940 and 1981. Manchester University Press and the British Arachnological Society, 673 pp.

Platnick, N. I. 1998. Advances in Spider Taxonomy 1992–1995. With Synonymies and Transfers 1940–1980. New York Entomological Society, 846 pp.

Platnick, N. I. 2005. The World Spider Catalog, Version 5.5 by N. I. Platnick. Copyright AMNH 2000–2005, http://research.amnh.org/entomology/spiders/catalog/SALTICIDAE.html

Pocock, R. I. 1897. Spinnen (Araneae), *In*: W. Kükenthal (ed.), Ergebnisse einer zoologische Forschungsreise in dem Molukken und Borneo, Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft, 23: 591–629.

Pocock, R. I. 1899. On the Scorpiones, Pedipalpines and Spiders, *In*: Willey, Zoological Results based on material from New Britain, Salomon Isl. etc. Proceedings of the Zoological Society of London, 1: 95–120.

Prószyński, J. 1984. Atlas rysunków diagnostycznych mniej znanych Salticidae. Zeszyty Naukowe WSRP, 177 pp.

Prószyński, J. 1990. Catalogue of Salticidae (Araneae) a synthesis of quotations in a world literature since 1940 with basic taxonomic data since 1758. Zeszyty Naukowe WSRP, 366 pp.

Prószyński, J. 2003. Salticidae (Araneae) of the World. Catalogue of Salticidae (Araneae) a synthesis of quotations in the world literature since 1940, with basic taxonomic data since 1758 (version revised in part on April 2005). Online version http://www.miiz.waw.pl/salticid/main.htm

Rainbow, W. I. 1911. A census of Australian Araneidae. Records of the Australian Museum, 9(2): 107–319.

Roewer, C. F. 1954: Katalog der Araneae von 1758 bis 1940. Institut Royal des Sciences Naturelles de Belgique, 2: 927–1751.

Simon, E. 1864. Histoire Naturelle des Araignées. Libraire Encyclopedique, 1: 1–540.

Simon, E. 1884. Notes sur le groupe des Diolenii. Annales de la Société entomologique de Belgique, 28: 225–231.

Simon, E. 1901. Histoire Naturelle des Araignées. Libraire Encyclopedique, 2(3): 381–668.

Strand, E. 1907. Vorläufige Diagnozen süd- u. ostaiat. Clubioniden, Ageleniden etc. Zoologischer Anzeiger, 31(17–18): 558–570.

Strand, E. 1909. Süd- und ostasiatische Spinnen II. Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft, 26: 1–128.

Strand, E. 1911. Araneae von den Aru- und Kei-Inseln. Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft, 34(2): 127–199.

Thorell, T. 1870. On European Spiders. Nova Acta Regicae Societatis Scientiarum Uppsaliensis, (3)7: 109–242.
Thorell, T. 1878. Studi sui ragni Malesi e Papuani. Part II. Ragni di Amboina raccolti dal Prof. O. Beccari. Genova. Annali del Museo civico di storia naturale di Genova, 13: 1–317.
Thorell, T. 1881. Studi sui ragni Malesi e Papuani. Part III. Ragni dell'Austro-Malesia e del Capo York, conservati nel Museo civico di storia naturale di Genova. Genova. Annali del Museo civico di storia naturale di Genova, 17: 1–720.
Urquhart, A. T. 1897. Descriptions of Species of New Zealand Araneae omitted from the Catalogue of 1891. Transactions of the New Zealand Institute, 29: 1–284.
Walckenaer, C. A. 1837. Histoire Naturelle des Insectes. Apteres. Paris, 1: 1–682.
Waterhouse, C. O. 1902. Index zoologicus. London, 421 pp.

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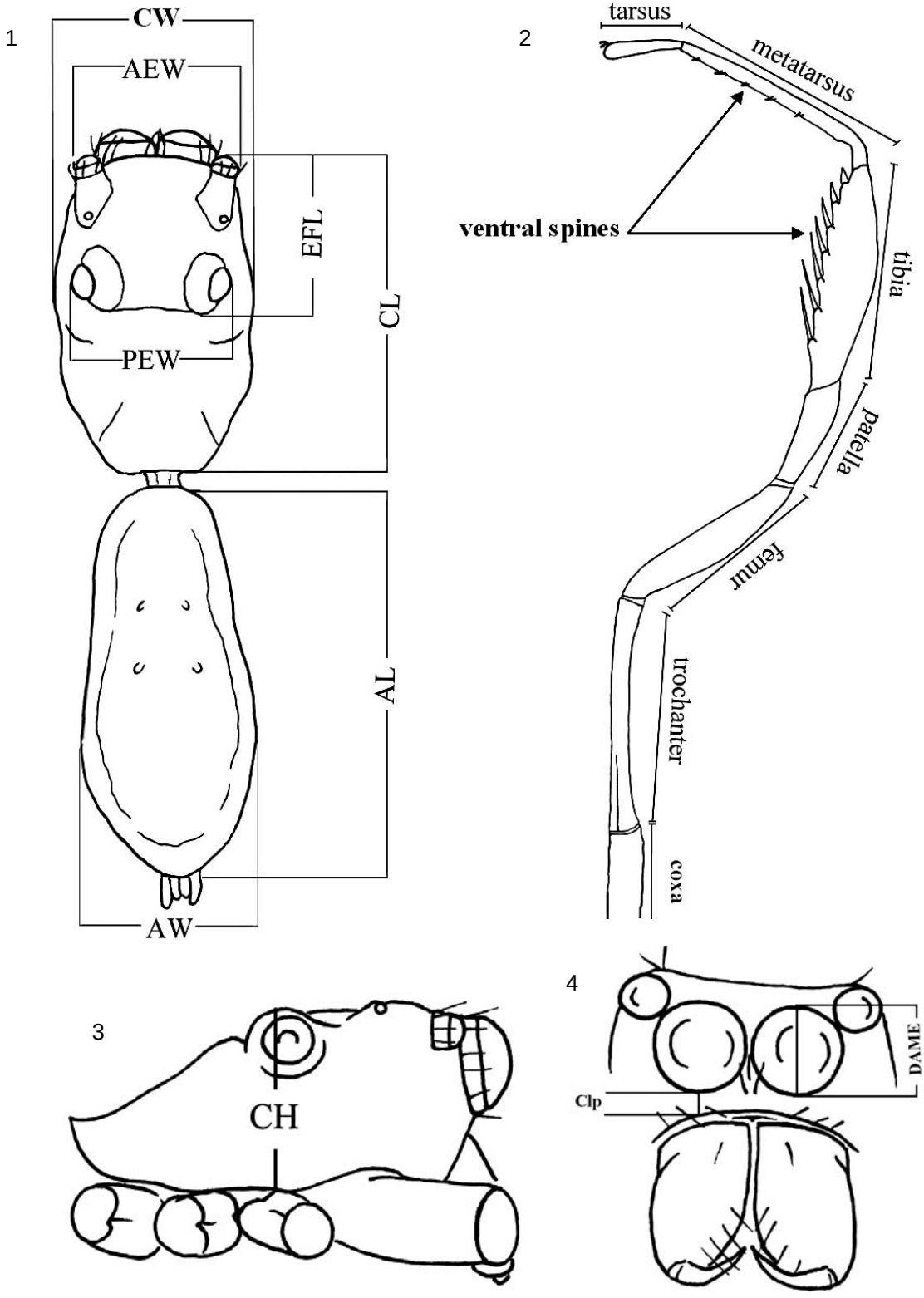
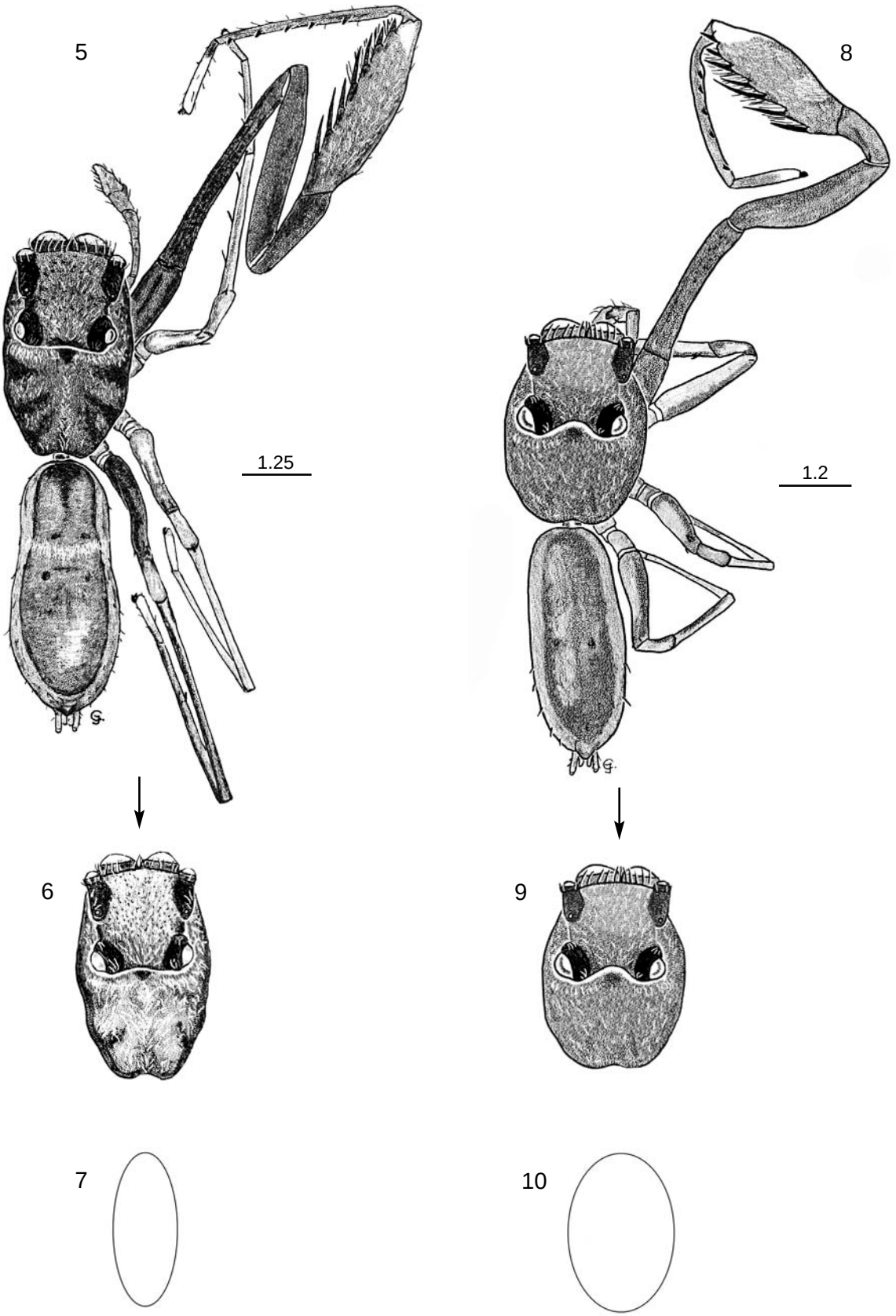
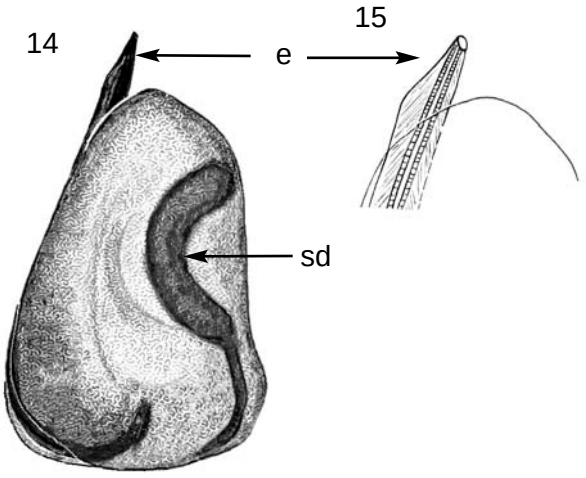


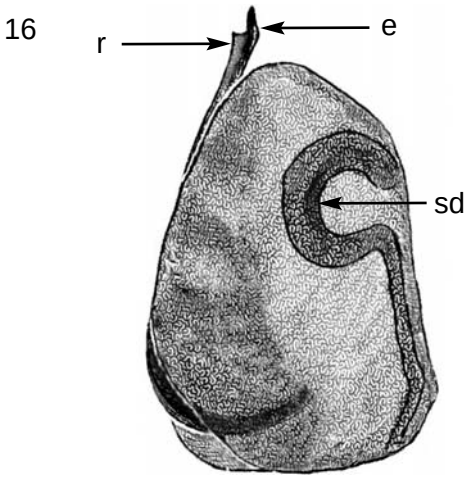
Figures 1–4. General characters of *Diolenius*. (1) Dorsal view; (2) leg I; (3) lateral view of cephalothorax; (4) frontal view.

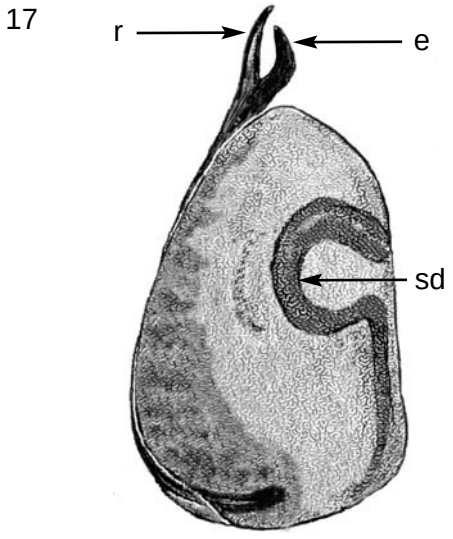


Figures 5–10. General appearance of *Diolenius* with shapes of cephalothorax. (5–7) Myrmecomorph; (8–10) not myrmecomorph.

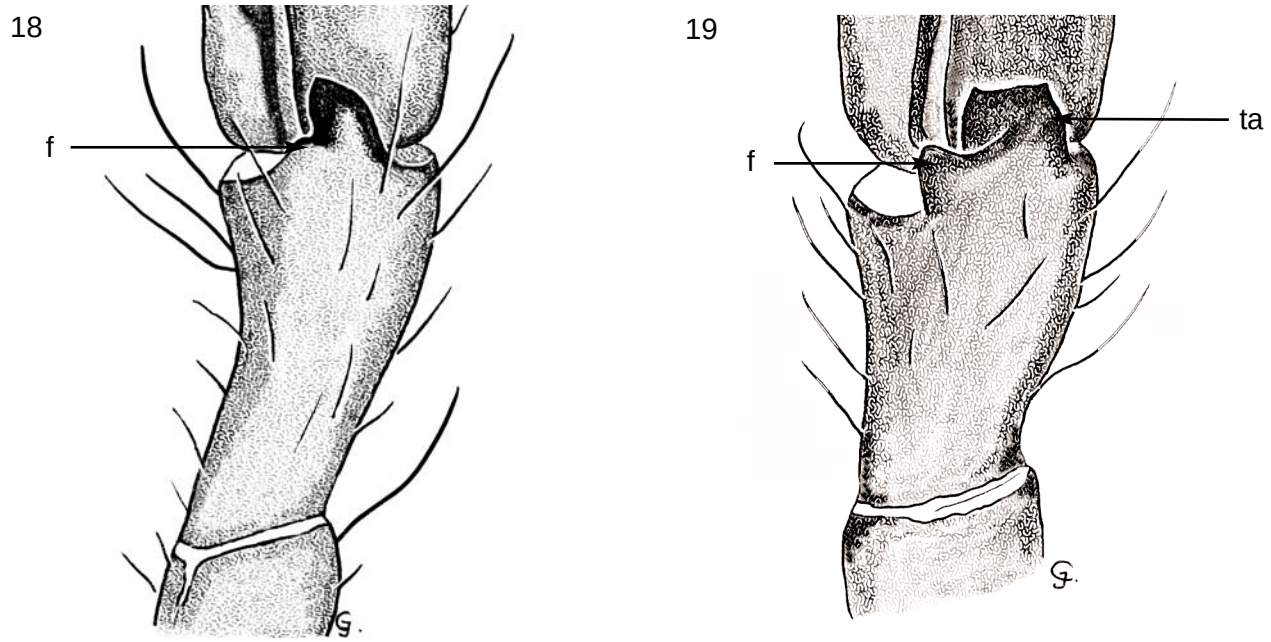
Figures 11–13. Legs I with development of tibia. (11) Tibia longer than femur; (12) tibia swollen and shorter than femur; (13) tibia normally developed and shorter than femur.







Figures 14–17. Bulbus and embolus. Embolus (14–15) simple; (16) with ramus shorter than embolus; (17) with ramus longer than embolus.



Figures 18–19. Tibial apophysis and basal flange. (18) Tibial apophysis slightly hooked and moderately slender, with small basal flange; (19) tibial apophysis strongly hooked and broad, with large basal flange.

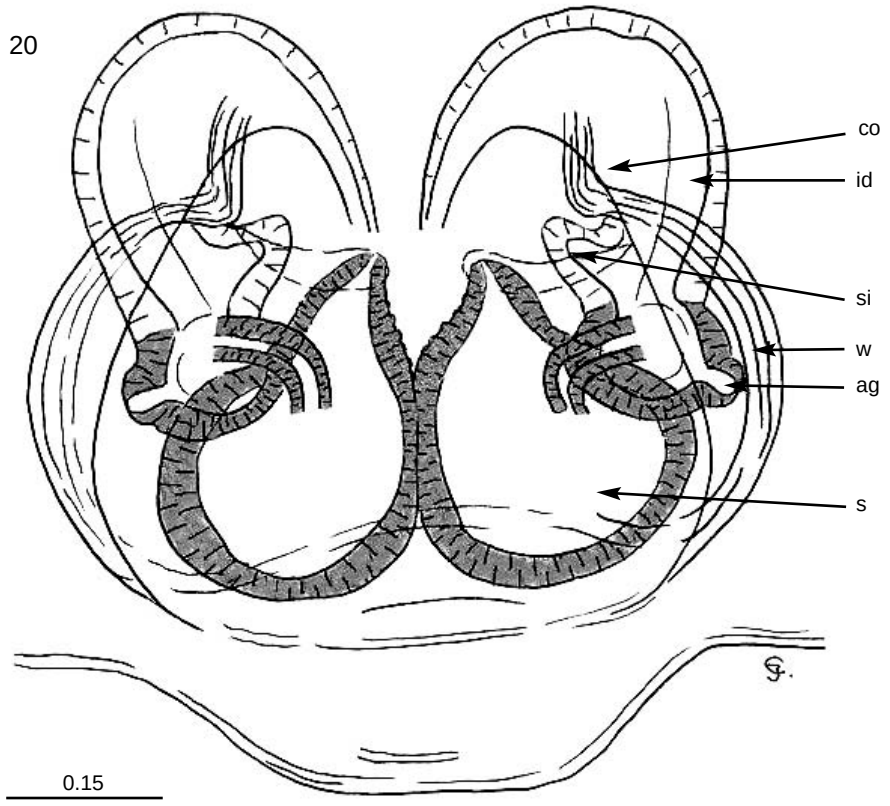
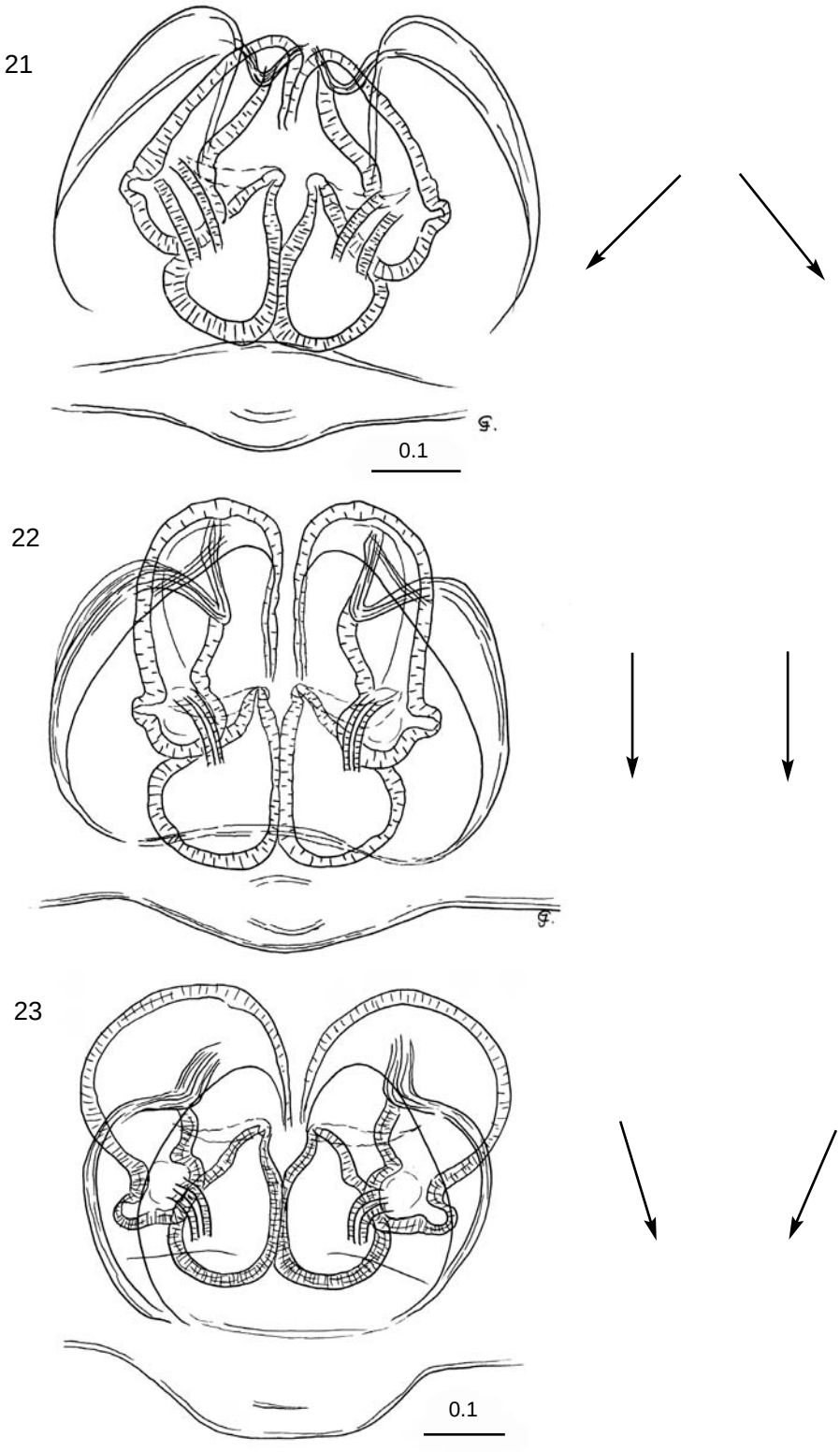
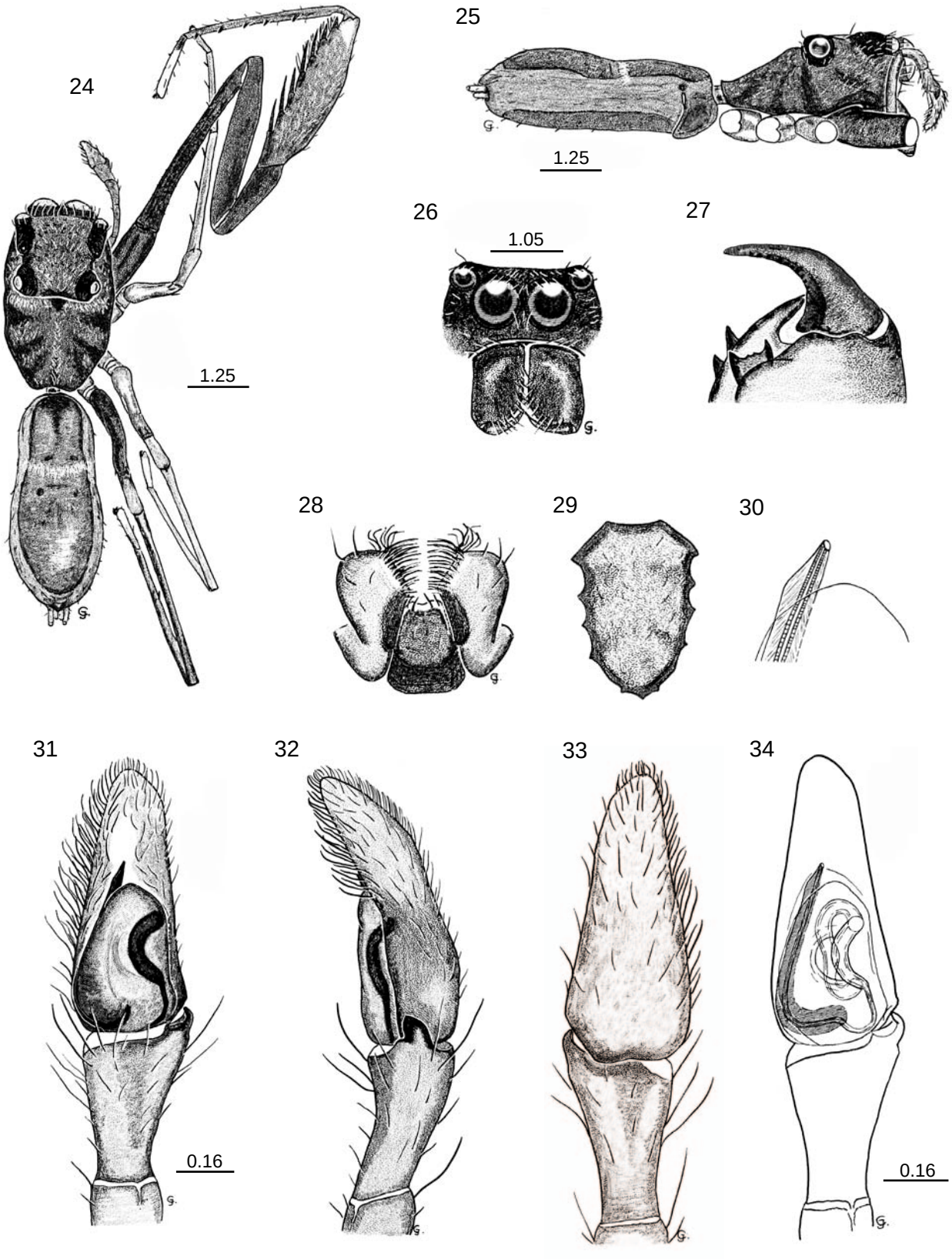


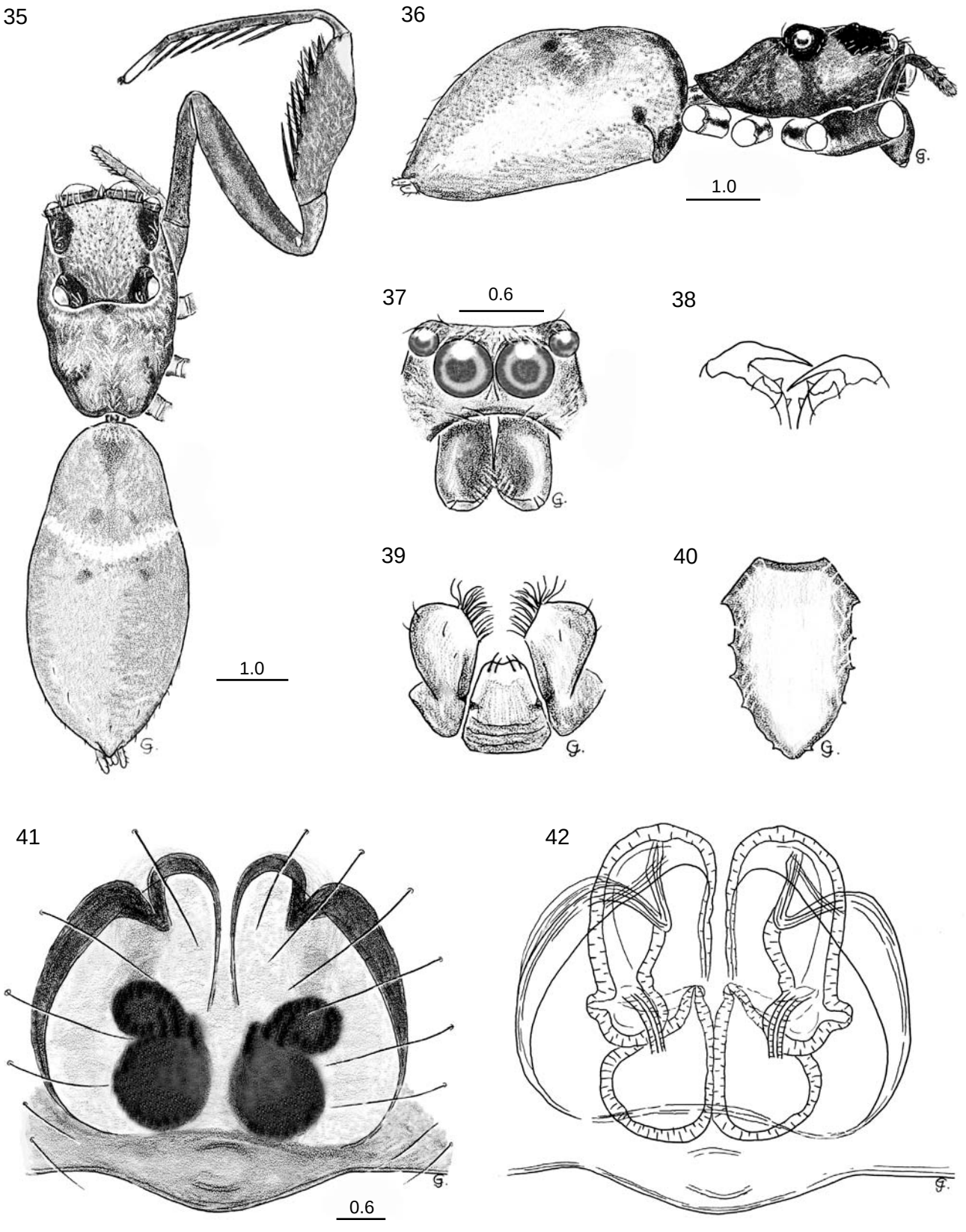
Figure 20. Internal structures of epigyne.



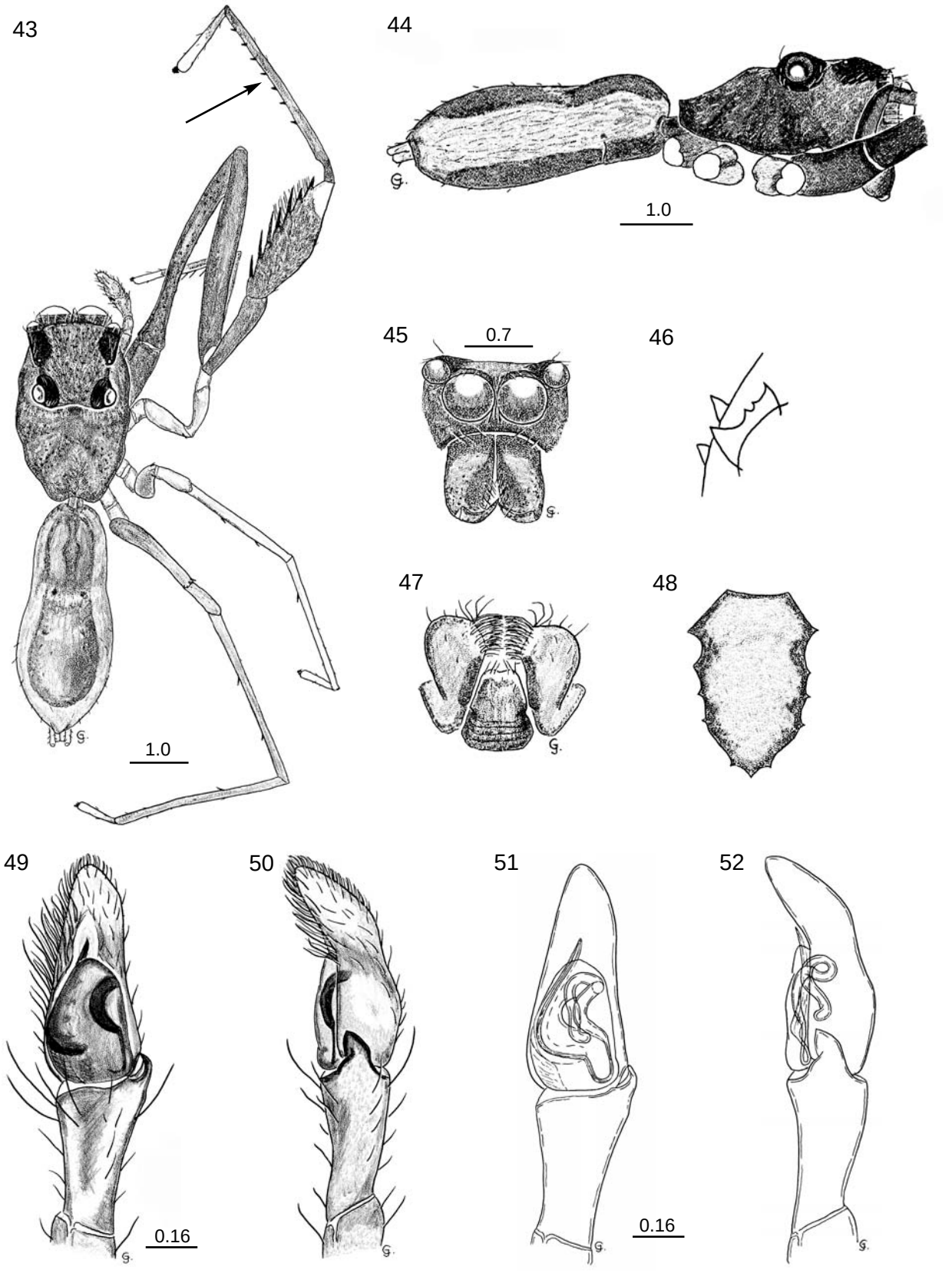
Figures 21–23. Proximal parts of insemination ducts. (21) Narrow, oblique laterally; (22) moderately narrow, parallel to each other; (23) very wide, coming together.



Figures 24–34. *Diolenius phrynoides* (Wlk.), male. (24) General appearance; (25) lateral view; (26) frontal view; (27) cheliceral teeth; (28) maxillae and labium; (29) sternum; (30) embolus; (31–33) palpal organ; (34) palpal internal structures.



Figures 35–42. *Diolenius phrynoides* (Wlk.), female. (35) General appearance; (36) lateral view; (37) frontal view; (38) cheliceral teeth; (39) maxillae and labium; (40) sternum; (41) epigyne; (42) epigynal internal structures.



Figures 43–52. *Diolenius armatissimus* Th., male (holotype). (43) General appearance; (44) lateral view; (45) frontal view; (46) cheliceral teeth; (47) maxillae and labium; (48) sternum; (49–50) palpal organ; (51–52) palpal internal structures.

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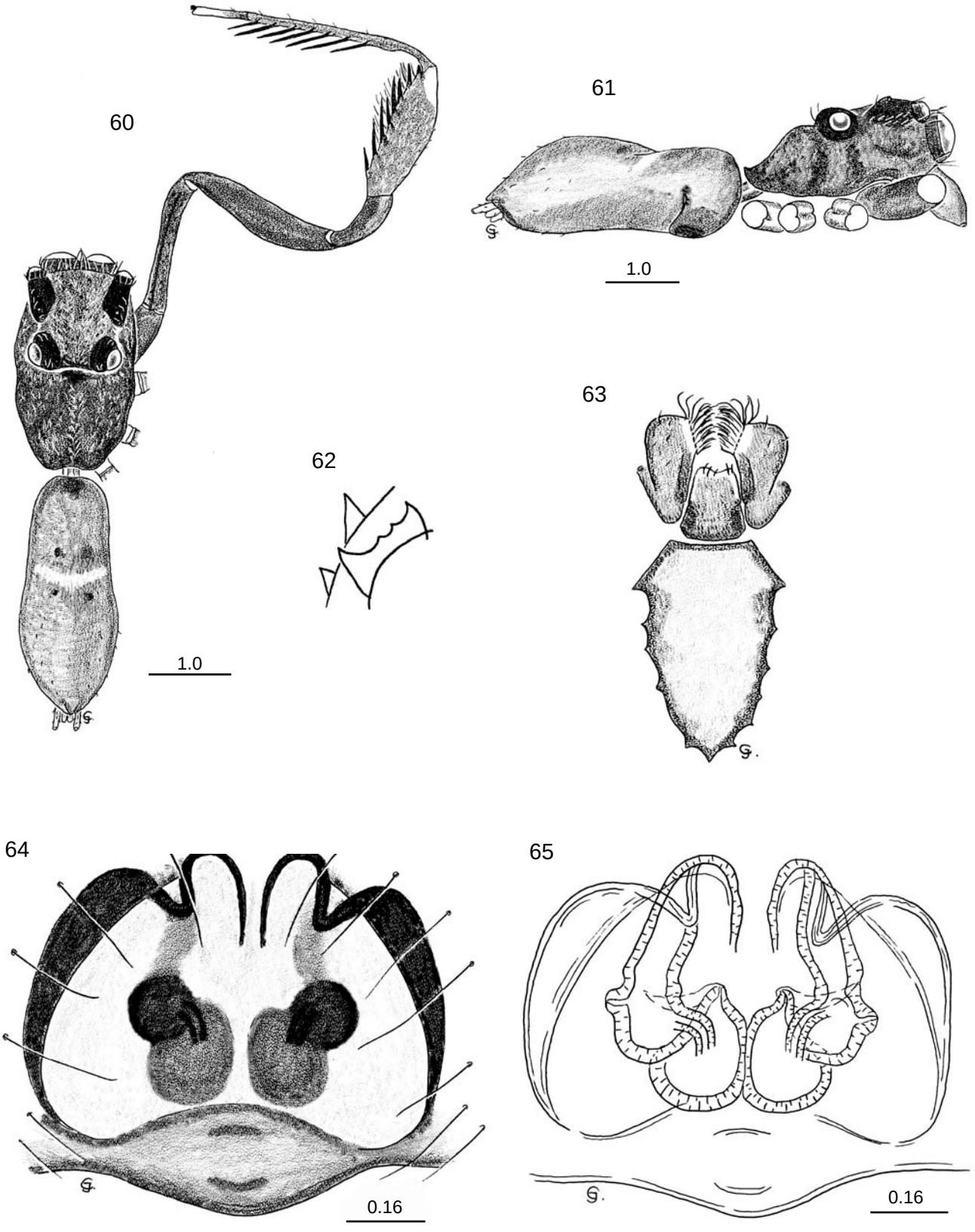
Figures 53–59. *Diolenius armatissimus* Th., male. (53–54) Dorsal view; (55) ventral view; (56–57) lateral view of cephalothorax; (58) frontolateral view; (59) leg I.



Figures 60–65. *Diolenius armatissimus* Th., female. (60) General appearance; (61) lateral view; (62) cheliceral teeth; (63) maxillae, labium and sternum; (64) epigyne; (65) internal genitalia.

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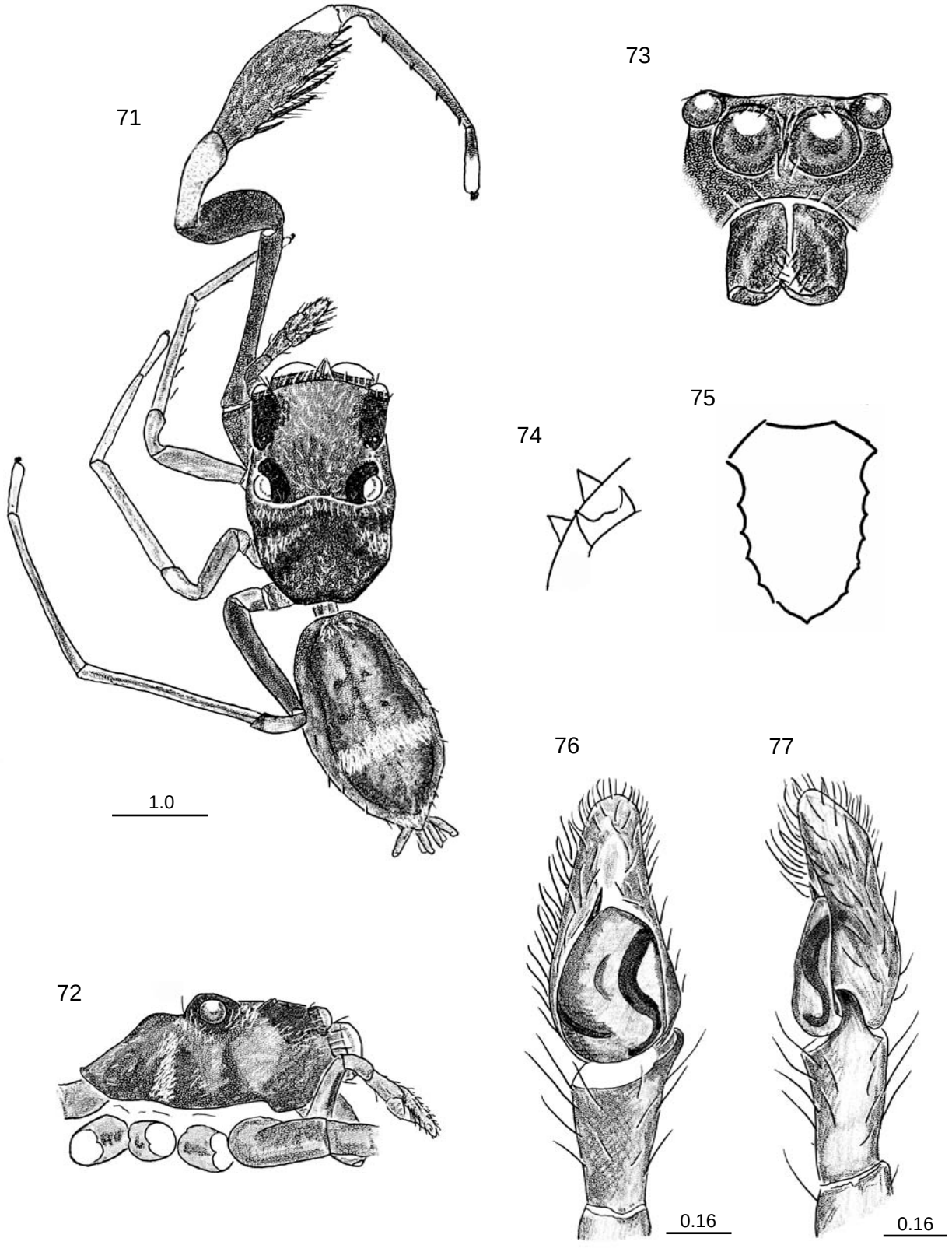
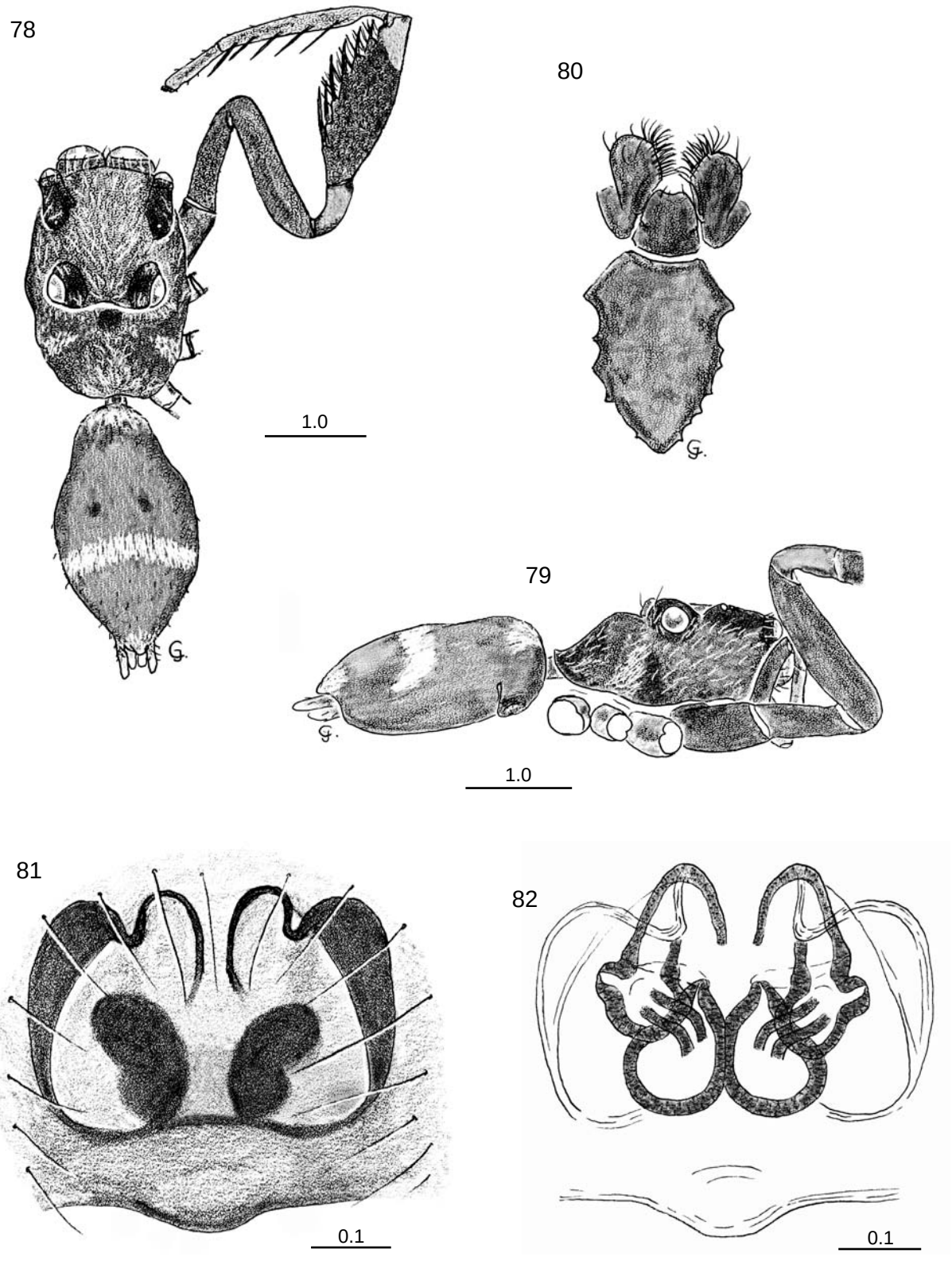
Figures 66–70. *Diolenius armatissimus* Th., female. (66) Dorsal view; (67) lateral view; (68) ventral view of cephalothorax; (69) frontal view; (70) leg I.



Figures 71–77. *Diolenius insignitus* sp. nov., male. (71) General appearance; (72) lateral view of cephalothorax; (73) frontal view; (74) cheliceral teeth; (75) sternum; (76–77) palpal organ.



Figures 78–82. *Diolenius insignitus* sp. nov., female (holotype). (78) General appearance; (79) lateral view; (80) maxillae, labium and sternum; (81) epigyne; (82) internal genitalia.

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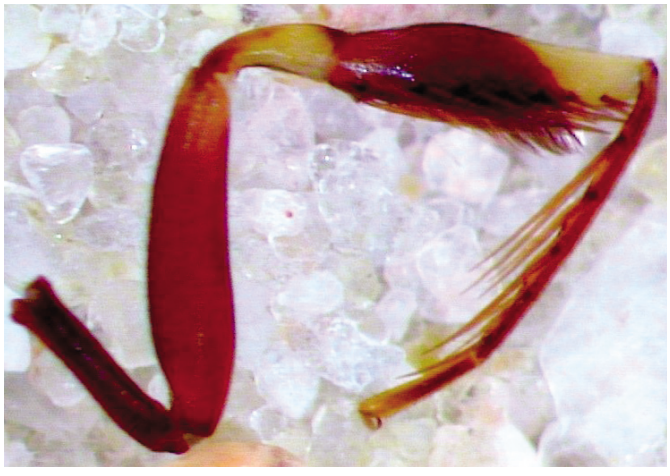
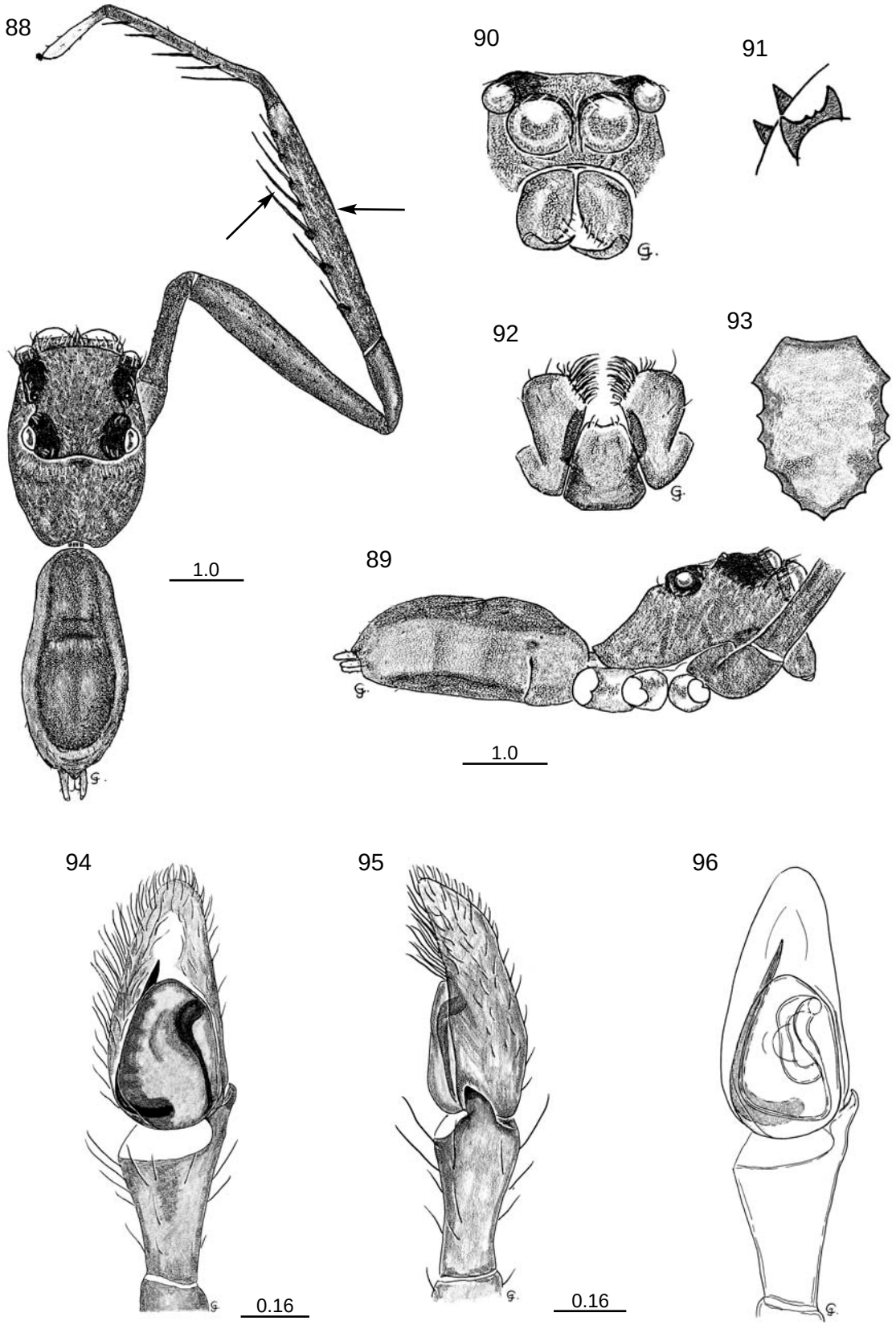


Figures 83–87. *Diolenius insignitus* sp. nov., female (holotype). (83–84) Dorsal view; (85) lateral view; (86) frontal view; (87) leg I.



Figures 88–96. *Diolenius angustipes* sp. nov., male (holotype). (88) General appearance; (89) lateral view; (90) frontal view; (91) cheliceral teeth; (92) maxillae and labium; (93) sternum; (94–95) palpal organ; (96) palpal internal structures.

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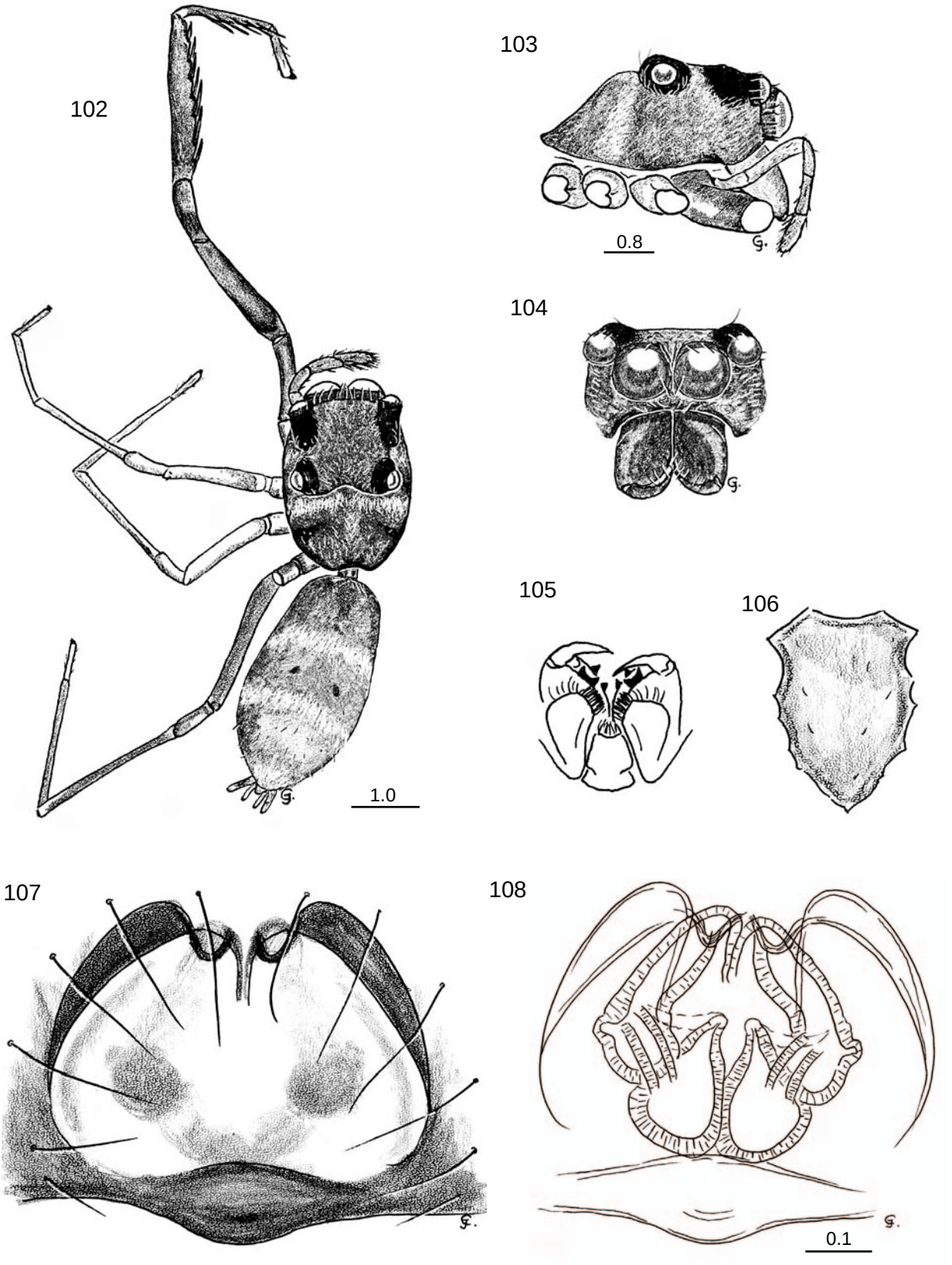
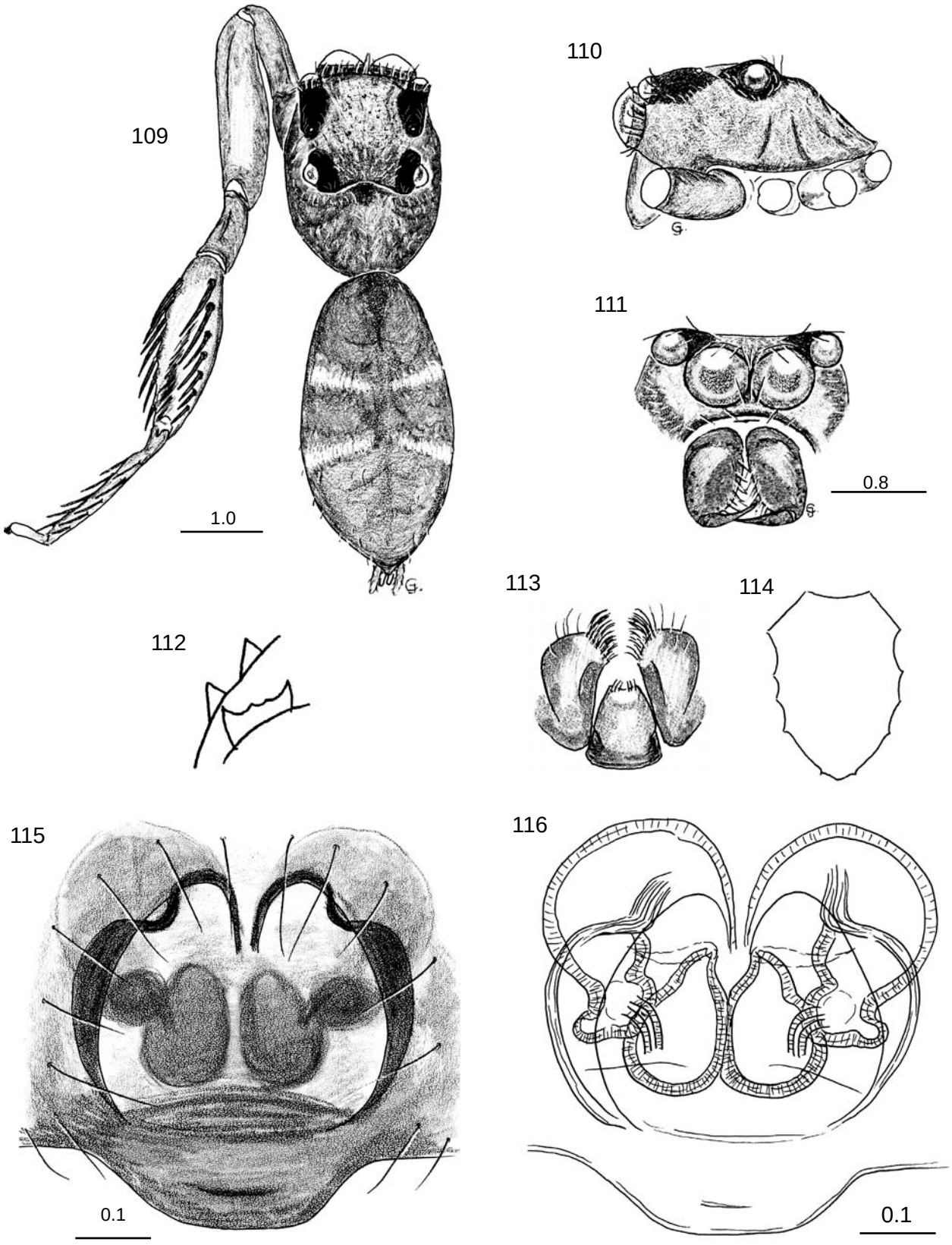
Figures 97–101. *Diolenius angustipes* sp. nov., male (holotype). (97–98) Dorsal view; (99) lateral view; (100) frontal view; (101) leg I.

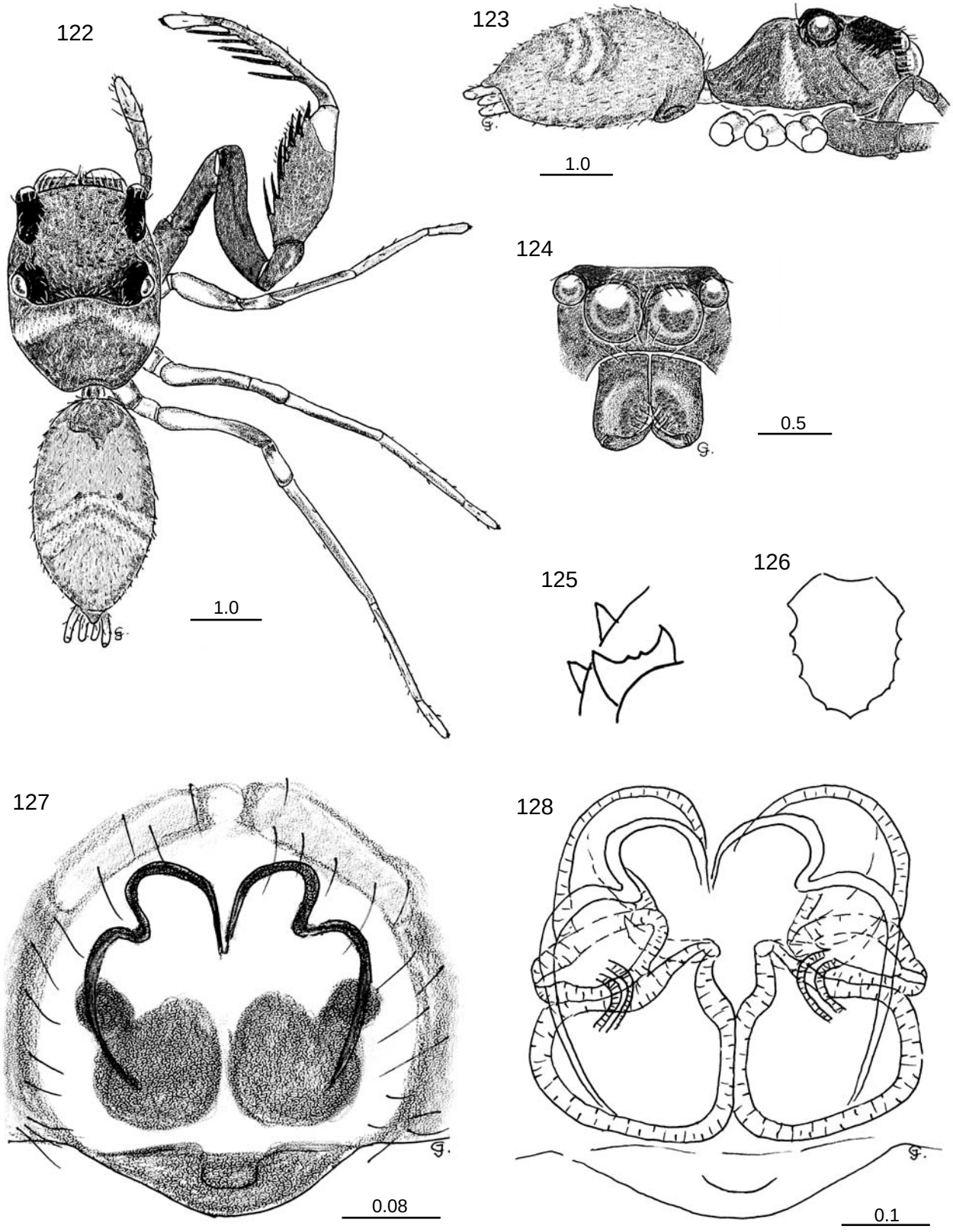


Figures 102–108. *Diolenius albopiceus* Hogg, female. (102) General appearance; (103) lateral view of cephalothorax; (104) frontal view; (105) cheliceral teeth, maxillae and labium; (106) sternum; (107) epigyne; (108) internal genitalia (holotype: 102–107).



Figures 109–116. *Diolenius amplectens* Th., female (lectotype). (109) General appearance; (110) lateral view of cephalothorax; (111) frontal view; (112) cheliceral teeth; (113) maxillae and labium; (114) sternum; (115) epigyne; (116) internal genitalia.

Figures 117–121. *Diolenius amplectens* Th., female. (117–118) Dorsal view; (119) lateral view; (120) frontolateral view; (121) dorsal view of cephalothorax.



Figures 122–128. *Diolenius decorus* sp. nov., female (holotype). (122) General appearance; (123) lateral view; (124) frontal view; (125) cheliceral teeth; (126) sternum; (127) epigyne; (128) internal genitalia.

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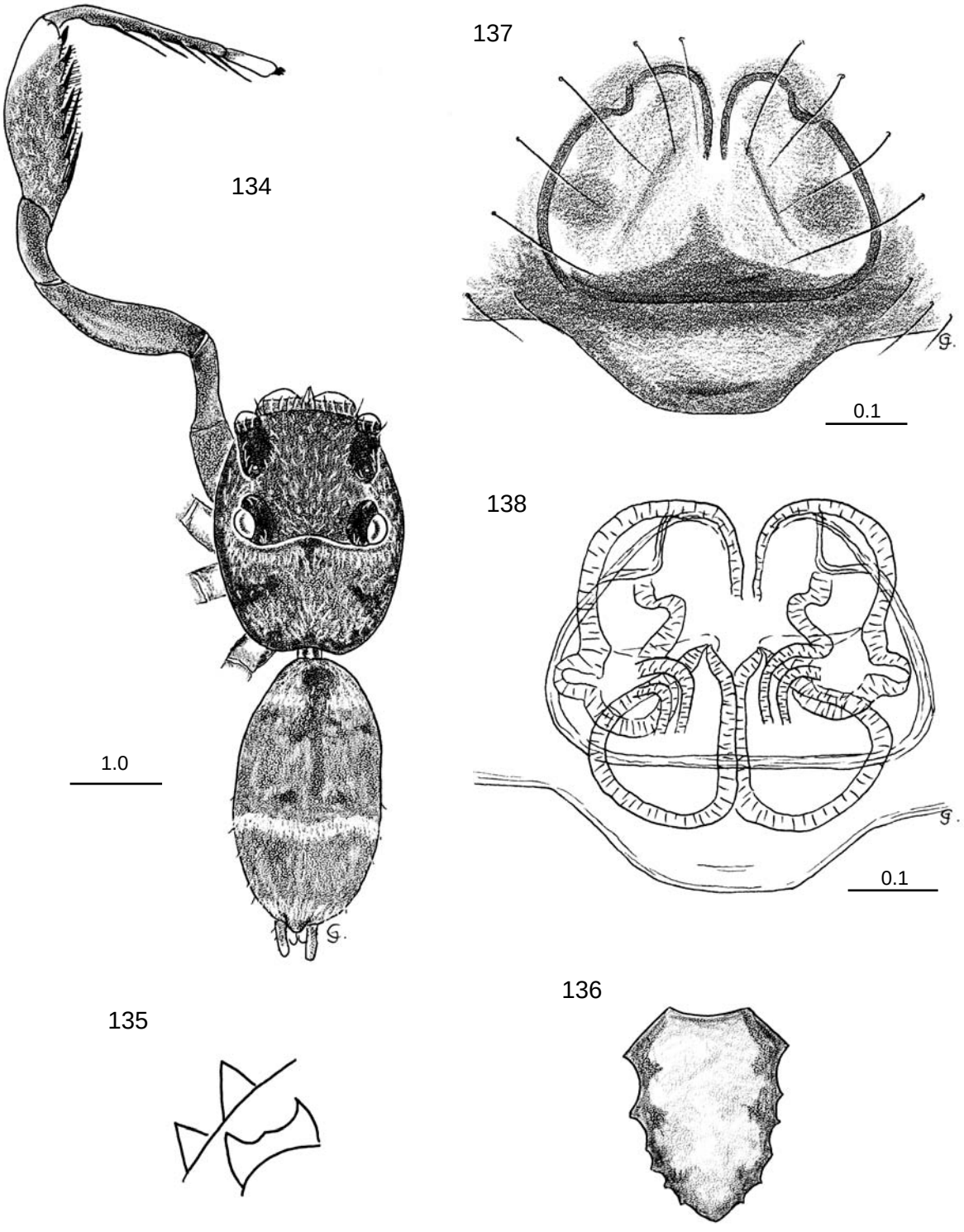
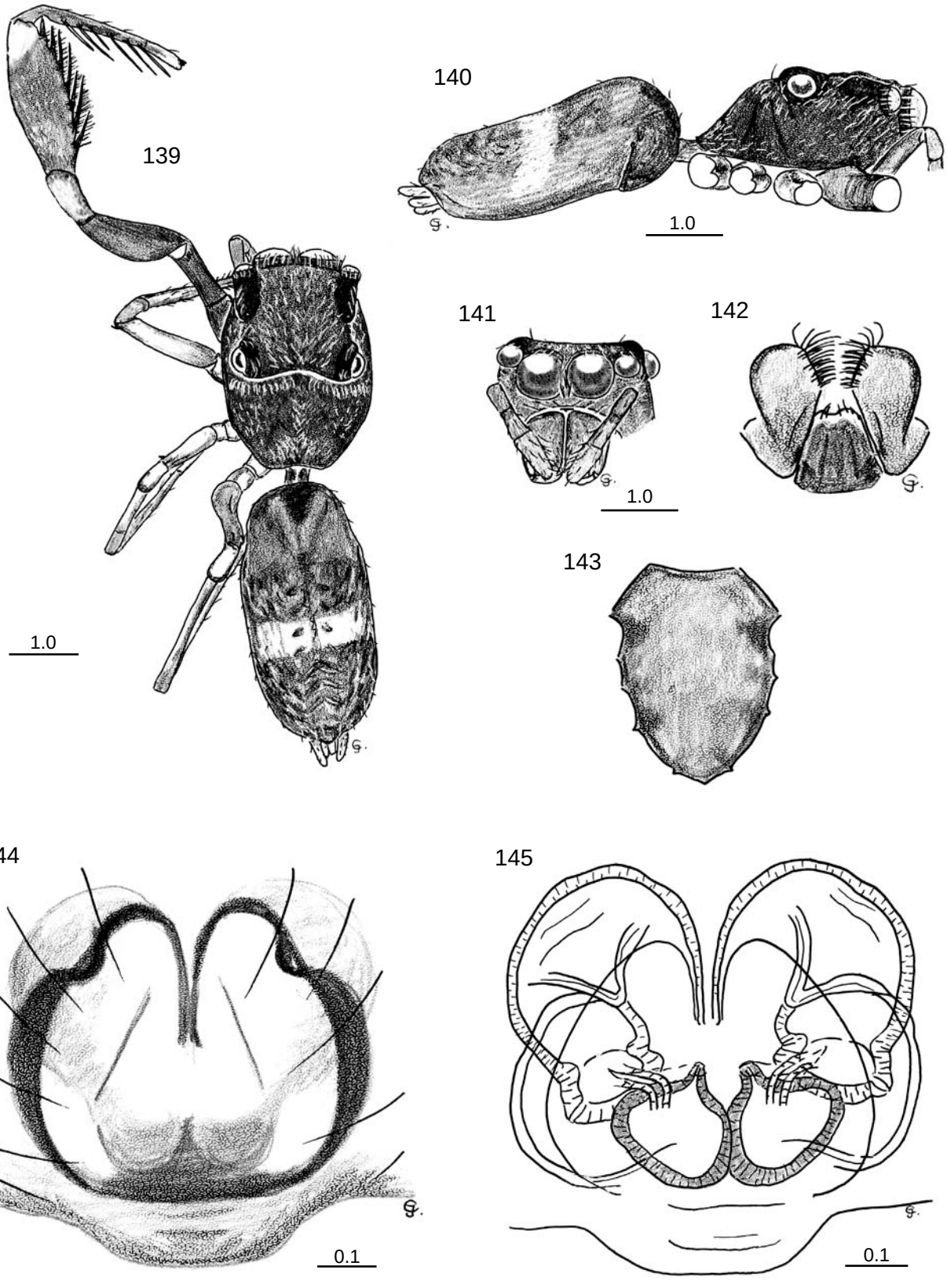
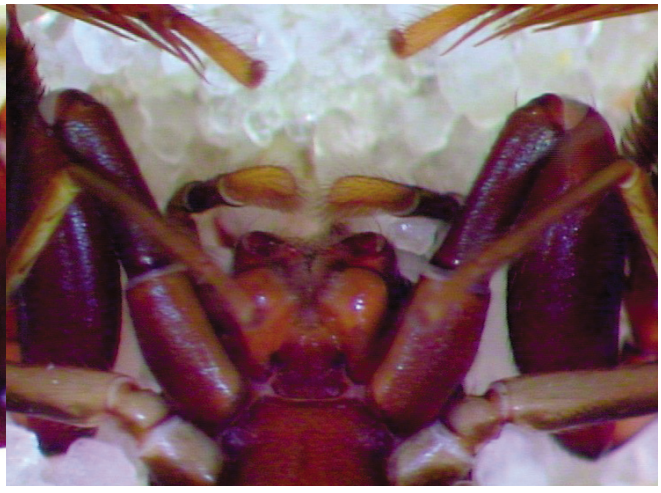
Figures 129–133. *Diolenius decorus* sp. nov., female (holotype). (129–130) Dorsal view; (131) lateral view; (132) frontal view; (133) leg I.



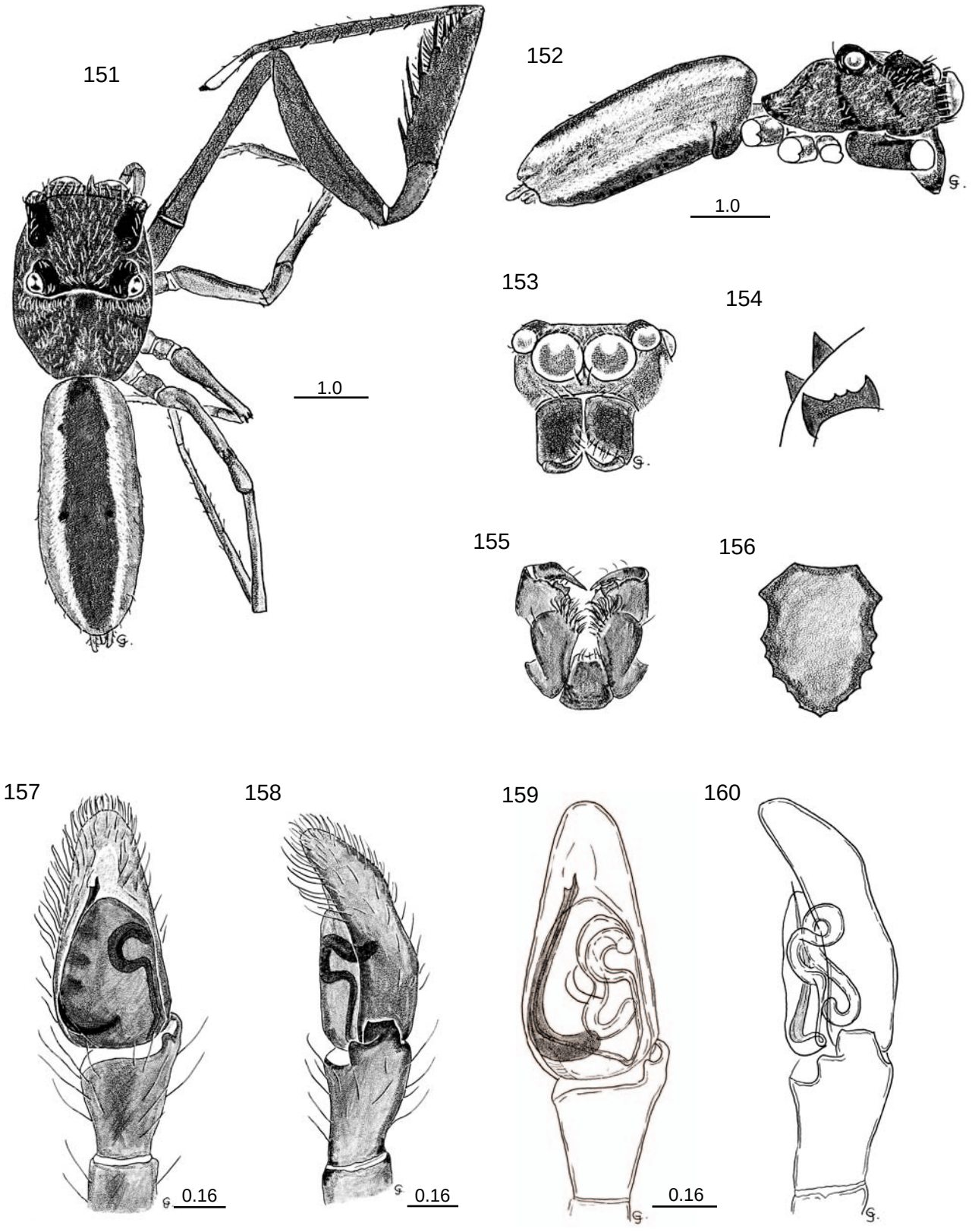
Figures 134–138. *Diolenius redimiculatus* sp. nov., female (holotype). (134) General appearance; (135) cheliceral teeth; (136) sternum; (137) epigyne; (138) internal genitalia.



Figures 139–145. *Diolenius infulatus* sp. nov., female (holotype). (139) General appearance; (140) lateral view; (141) frontal view; (142) maxillae and labium; (143) sternum; (144) epigyne; (145) internal genitalia.



Figures 146–150. *Diolenius infulatus* sp. nov., female (holotype): (146) dorsal view; (147) frontal view; (148–149) lateral view; (150) ventral view of cephalothorax.



Figures 151–160. *Diolenius lineatus* sp. nov., male (holotype). (151) General appearance; (152) lateral view; (153) frontal view; (154) cheliceral teeth; (155) chelicerae, maxillae and labium; (156) sternum; (157–158) palpal organ; (159–160) internal palpal structures.

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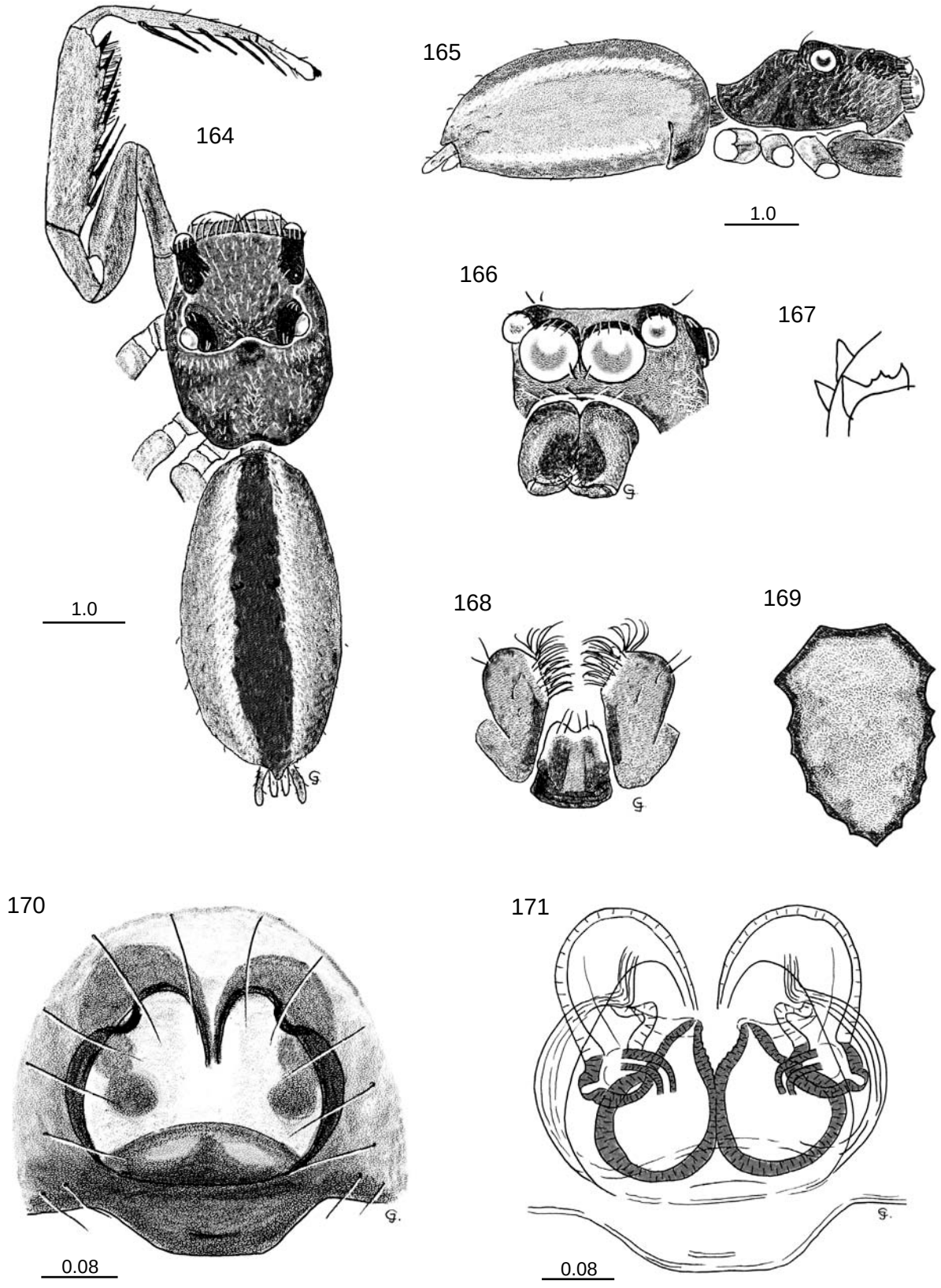
Figures 161–163. *Diolenius lineatus* sp. nov., male (holotype). (161) Dorsal view; (162) lateral view; (163) leg I.



Figures 164–170. *Diolenius lineatus* sp. nov., female (allotype). (164) General appearance; (165) lateral view of cephalothorax; (166) frontolateral view; (167) cheliceral teeth; (168) maxillae and labium; (169) sternum; (170) epigyne; (171) internal genitalia.

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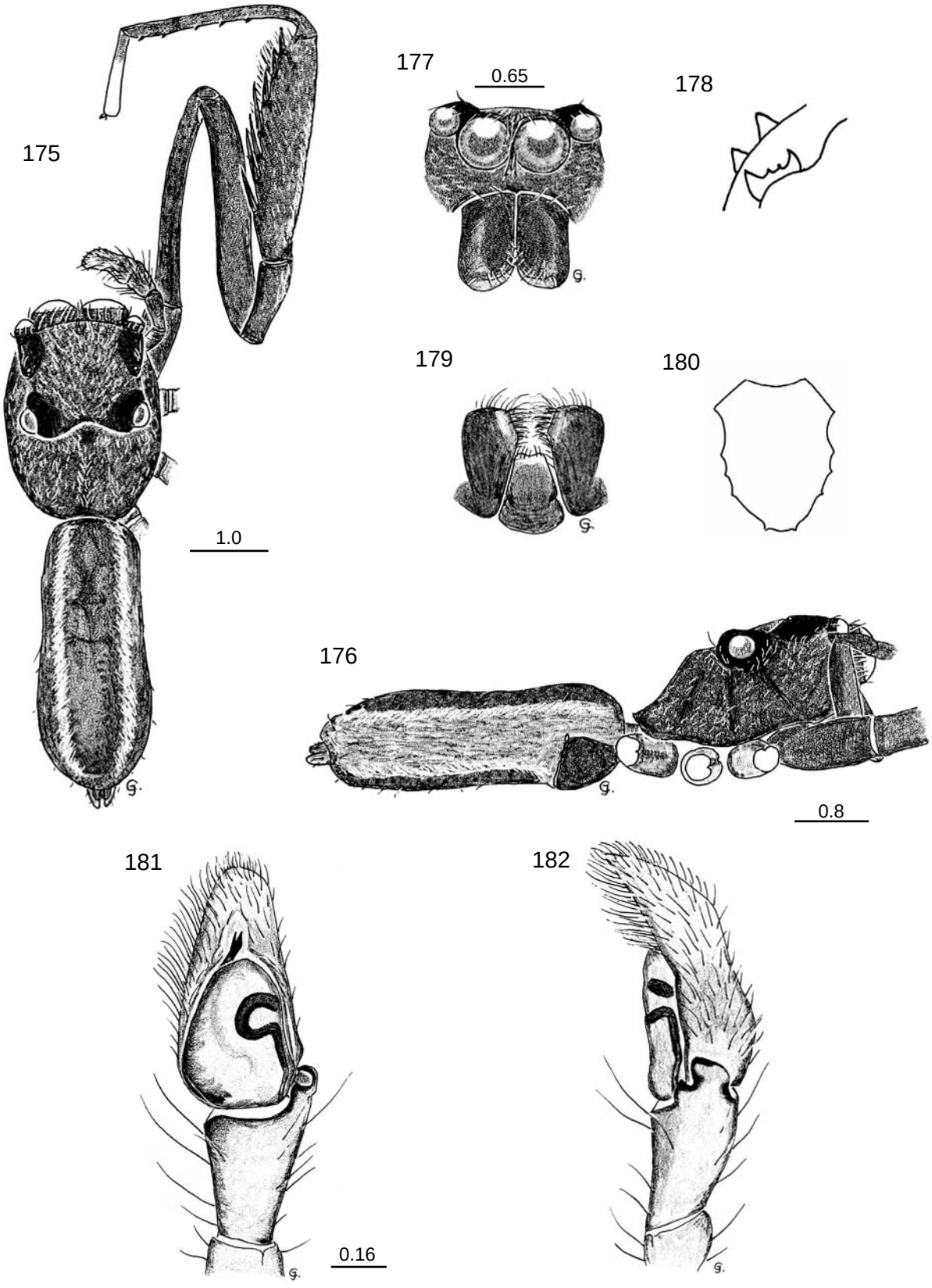
Figures 172–174. *Diolenius lineatus* sp. nov., female (allotype). (172) Dorsal view; (173) frontal view; (174) lateral view.



Figures 175–182. *Diolenius lugubris* Th., male (holotype). (175) General appearance; (176) lateral view; (177) frontal view; (178) cheliceral teeth; (179) maxillae and labium; (180) sternum; (181–182) palpal organ.

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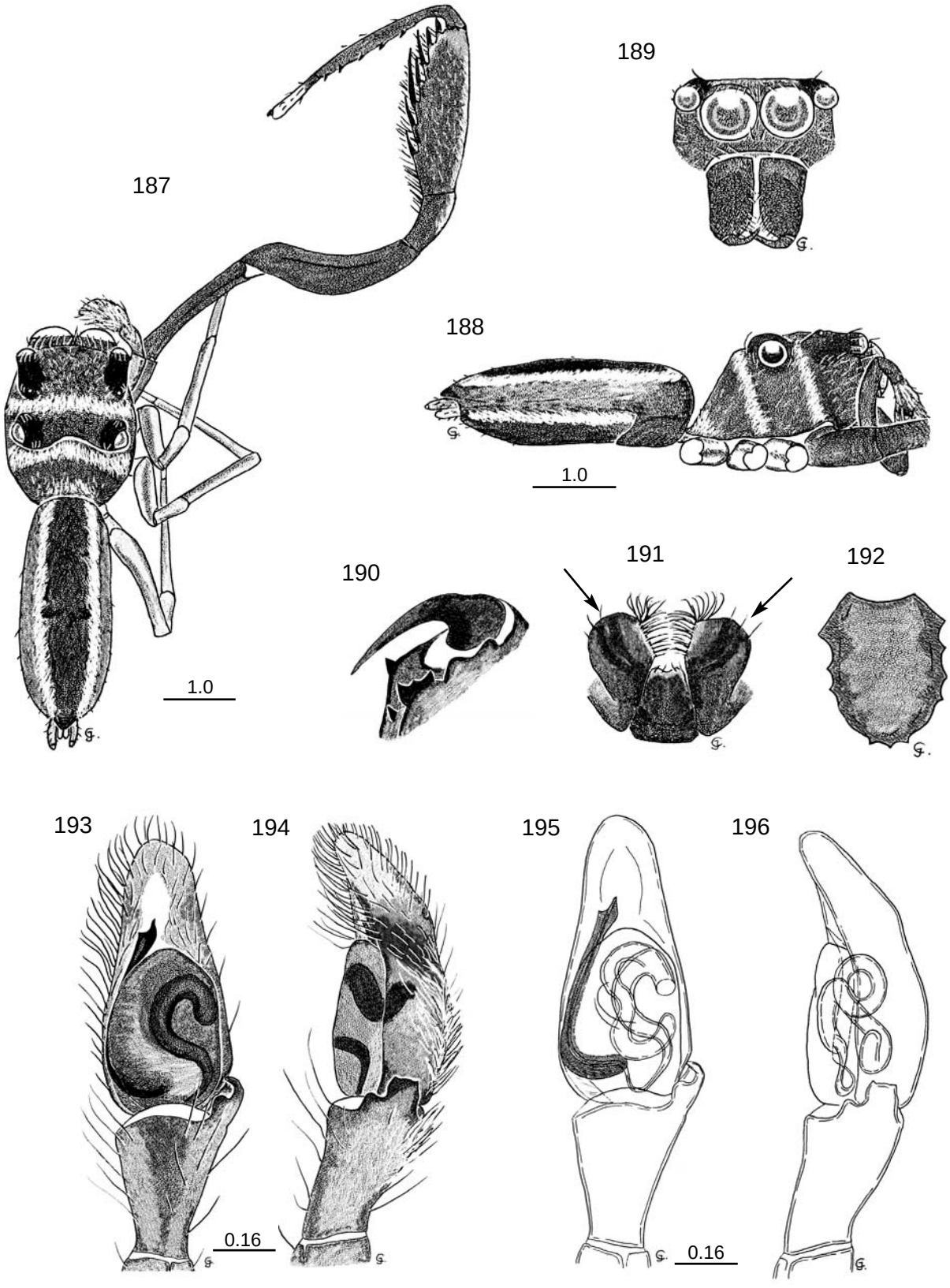
Figures 183–186. *Diolenius lugubris* Th., male. (183–184) Dorsal view; (185) lateral view of cephalothorax; (186) leg I.



Figures 187–196. *Diolenius virgatus* sp. nov., male (holotype). (187) General appearance; (188) lateral view; (189) frontal view; (190) cheliceral teeth; (191) maxillae and labium; (192) sternum; (193–194) palpal organ; (195–196) palpal internal structures.

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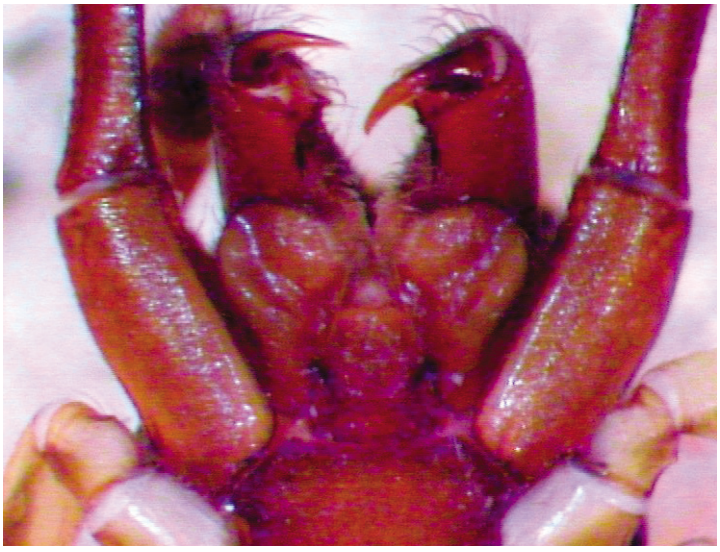

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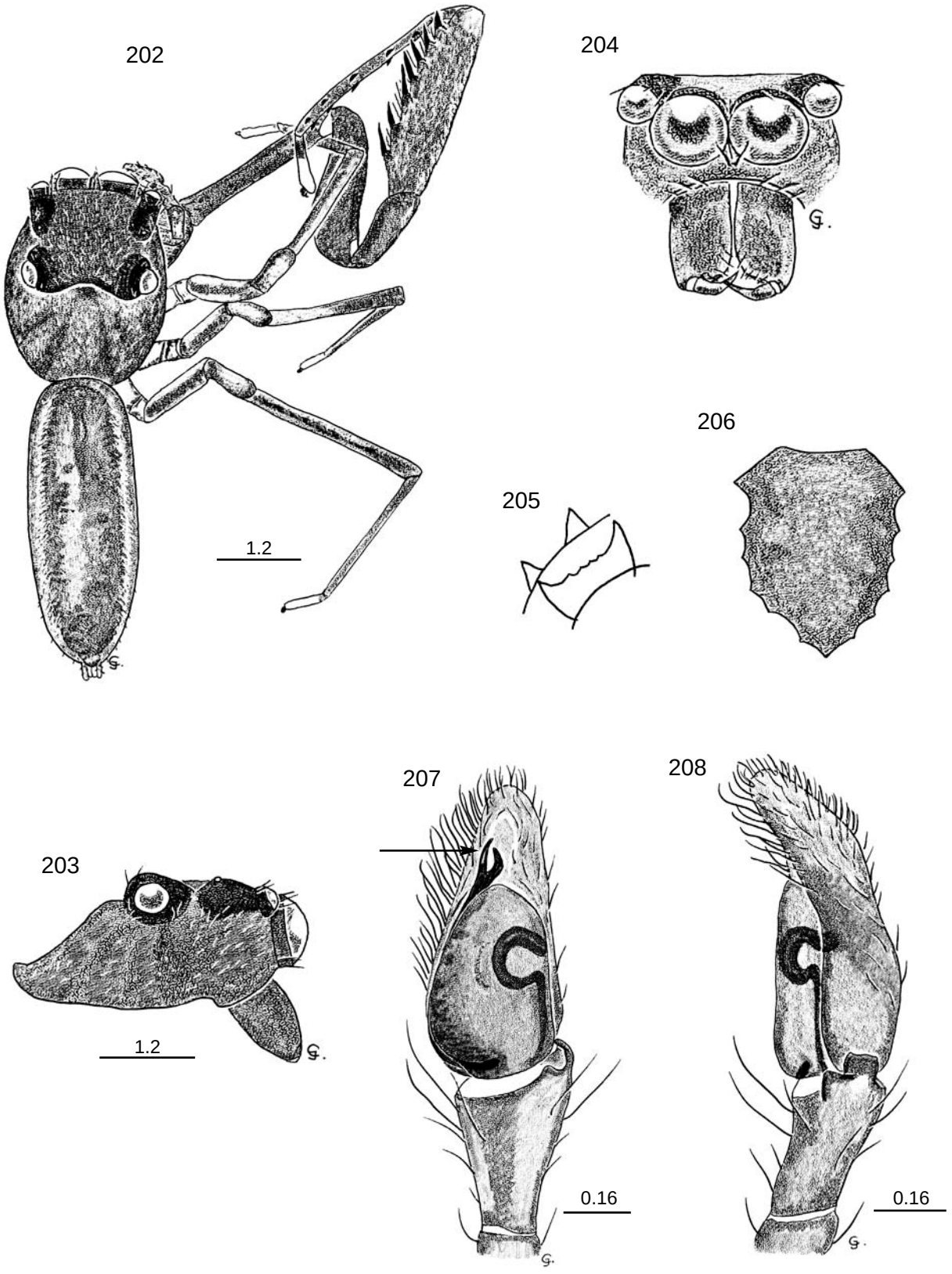
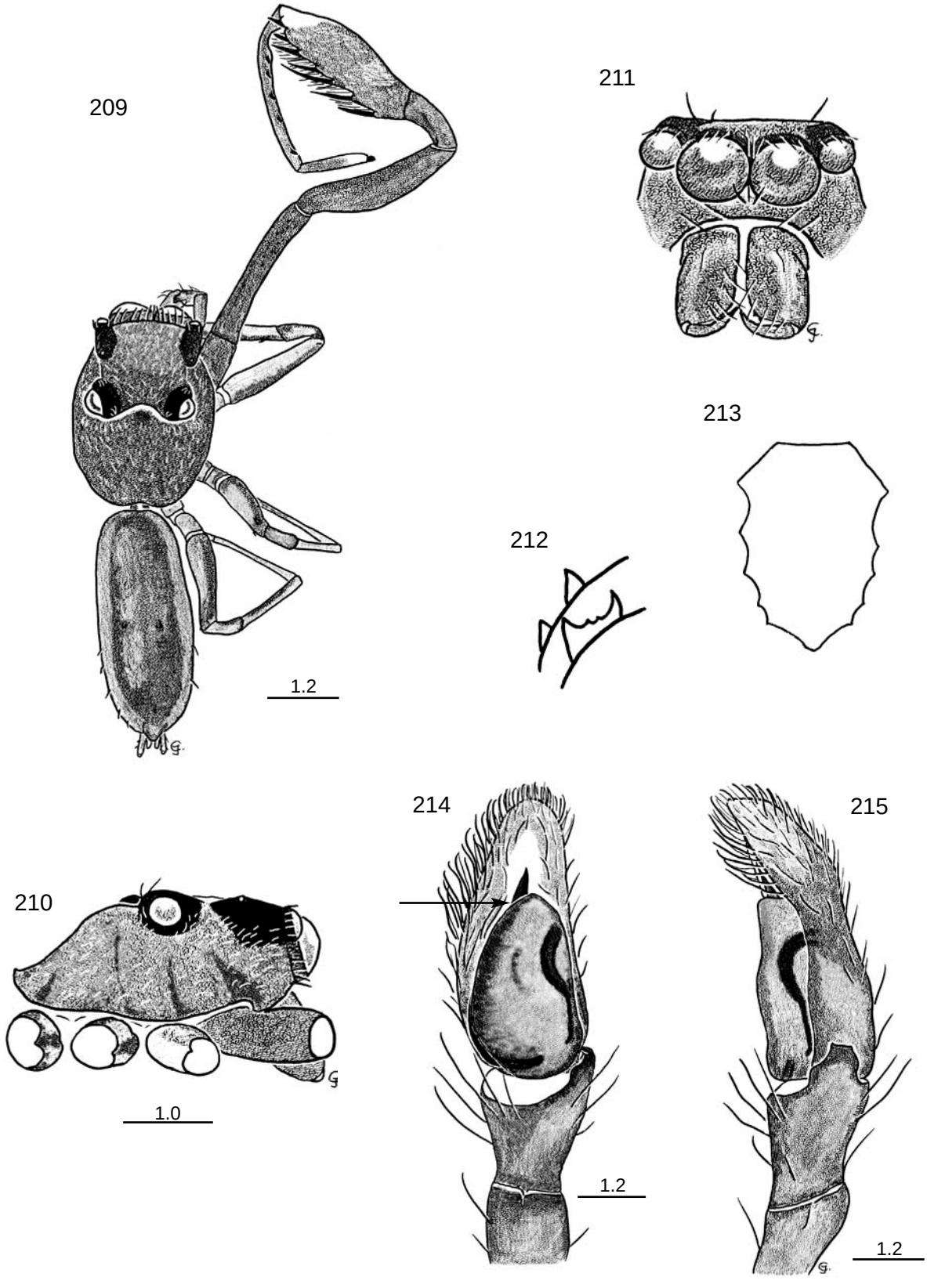
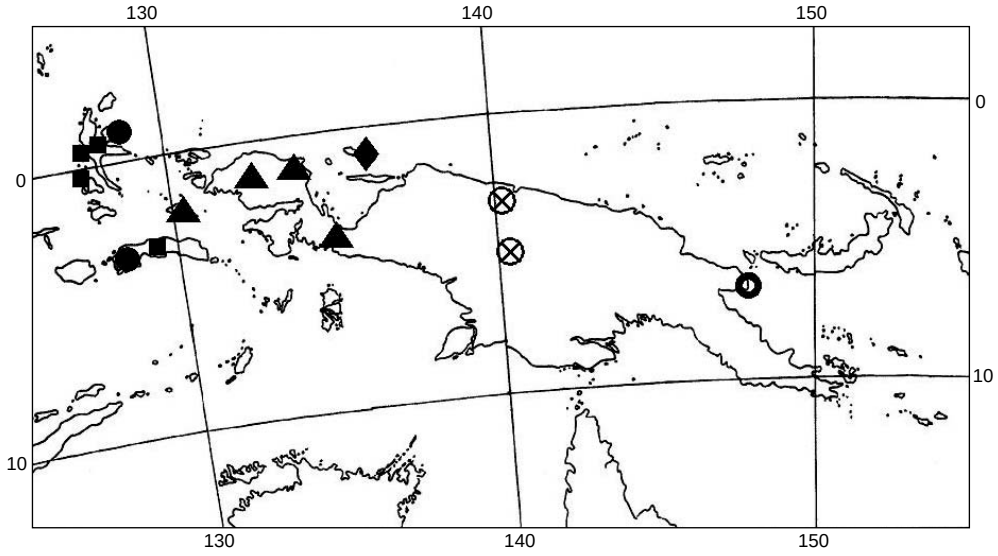
Figures 197–201. *Diolenius virgatus* sp. nov., male (holotype). (197–198) Dorsal view; (199) frontolateral view; (200) ventral view; (201) leg I.

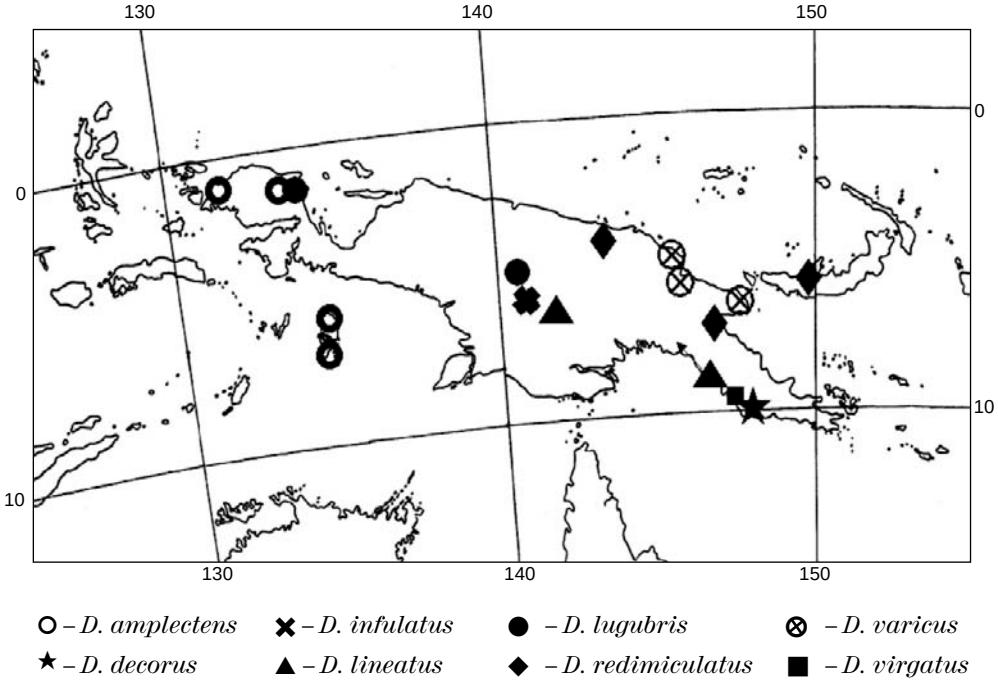


Figures 202–208. *Diolenius varicus* sp. nov., male (holotype). (202) General appearance; (203) lateral view of cephalothorax; (204) frontal view; (205) cheliceral teeth; (206) sternum; (207–208) palpal organ.



Figures 209–215. *Diolenius paradoxus* sp. nov., male (holotype). (209) General appearance; (210) lateral view of cephalothorax; (211) frontal view; (212) cheliceral teeth; (213) sternum; (214–215) palpal organ.





Figures 216–217. Geographical distribution of the species of *Diolenius*.