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First record of *Synagelides* Strand, 1906 (Araneae: Salticidae) from Sri Lanka: description of four endemic species from tropical wet forest of the island

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Abstract

Synagelides Strand, 1906 is recorded for the first time in Sri Lanka. Four new species are described and illustrated: *S. hortonensis* **sp. nov.**, *S. lakmalii* **sp. nov.**, *S. rosalindae* **sp. nov.** and *S. orlandoi* **sp. nov.** A key to the four new species is given.

Key words: Arachnida, Biodiversity, ground spiders, leaf litter, threatened species

Introduction

Litter habitats (surface litter, a partially decomposing layer, a humus layer and associated ground) provide livelihood for a vast variety of macro and micro invertebrates, including spiders, by providing shelter, food and favorable environmental conditions (Bizuet-Flores *et al.* 2015; Dhali *et al.* 2017). Litter spiders are generalist predators and may be ideal bioindicators for ecological changes in soil ecosystems (Brumwell *et al*. 1998).

Salticidae includes several ground dwelling genera that are a critical part of soil ecosystems. Spiders of the genus *Synagelides* Strand, 1906 were commonly encountered during recent field work in Sri Lanka. They are thought to be ant mimics (Szűts 2003; Logunov & Hereward 2006; Prószyński 2009). *Synagelides* is geographically restricted to the tropics and subtropics in the Oriental and East Palaearctic regions, from where a total of 46 species have been reported up to date (World Spider Catalog 2020). Prior to this study, the genus was not known from Sri Lanka. In this paper we describe four new species from Sri Lanka, recording the genus for first time.

Material and methods

Methodology and taxonomic descriptions are based on the format of Benjamin & Kanesharatnam (2016) and Kanesharatnam & Benjamin (2016). Sampling was primarily done by sifting litter and keeping the residue overnight in a Winkler extractor. Alternatively, a heap of dead leaves was scooped from forest floor and spread on a white sheet and spiders collected by hand or aspirator. The collected specimens were preserved in 70% ethanol and identified using an Olympus SZX7 stereomicroscope. Female genitalia were excised and digested with Sigma Pancreatin LP 1750 enzyme complex, in a solution of sodium borate (Dingerkus & Uhler 1977). Male palps and epigynes were cleared and mounted with methyl salicyclate for further examination. Illustrations of male palps, epigyne and vulva were made with the aid of a drawing tube attached to an Olympus BX51 compound microscope. A Nikon D80 camera with a macro lens was used to take photographs of live spiders. Photographs of palps, epigynes and intact spiders were taken with a Leica MC170 HD camera mounted on a Leica M205C stereomicroscope using the Leica Application Suite software (Leica Microsystems Limited, Germany) and merged with Helicon Focus image stacking software (version 6, Helicon soft Ltd). Images were then edited with Adobe Photoshop CC and assembled using Adobe Illustrator CS6. All measurements are in millimeters. All specimens, unless otherwise stated, are deposited in NMSL.

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Abbreviations: Morphology: AL: abdominal length; AR: arcuated rim; AW: abdominal width; CD: copulatory ducts; CO: copulatory opening; DTA: distal tibial apophysis; E: embolus; F: fossae; FD: fertilization ducts; Fm: femur; ITA: intermediate tibial apophysis; MA: median apophysis; MS: median septum; Mt: metatarsus; PL: proximal lobe of bulb; PLe: prosoma length; PLE: posterior lateral eyes; PME: posterior median eyes; Pt: patella; PW: prosomal width; RTA: retrolateral tibial apophysis; S: spermatheca; T: tegulum; Ta: tarsus; Tb: tibia; TL: total length; VTA: ventral tibial apophysis. Institutions: DFC: Department of Forest Conservation; DWLC: Department of Wildlife Conservation; NMSL: National Museum of Sri Lanka; NIFS: National Institute of Fundamental Studies.

Results

Taxonomy

Salticidae Blackwall, 1841

Subfamily Salticinae Blackwall, 1841

Tribe Agoriini Simon, 1901 (*sensu* Maddison 2015)

Synagelides Strand, 1906

Synagelides Strand in Bosenberg & Strand 1906: 330 (type species: *Synagelides agoriformis* Strand, 1906).

Diagnosis: *Synagelides* can be recognized by the strikingly modified male palps with enlarged patella with a femur connected at 90°, and presence of femoral apophysis (Figs 7E–F, 8D, 8F), several apical tibial apophysis, spirally arranged embolus (Figs 1D–E, 2A–C, 4D, 5B–C, 7D–F, 8A–F, 9C–E) and epigyne with arcuated rims and pockets (Figs 2D–E, 3C–E, H–J, 5D–E). Further, the ant-like sandy brown habitus (Figs 1A, 1C, 3A, F, 4A, 6A–D, 7A, 9A), patella I as long as femur I, elongated front legs with long and stout spines on metatarsi and tibiae (Prószyński 2009) separate *Synagelides* from most other jumping spiders.

Synagelides are similar to *Agorius* Thorell, 1877, but differ by the more compact body (elongate with abdomen constricted in the middle in *Agorius*). However, some *Synagelides* also seem to possess the above characters and cannot be unambiguously separated from *Agorius*.

Description: Small, ant-like spiders with size ranging from 2–4 mm in length (Bohdanowicz 1987; Logunov & Hereward 2006). Flattened and stippled prosoma with distinct fovea (Liu *et al.* 2017). Square-shaped ocular quadrangle. Cervical groove in between PMEs. Chelicerae with 2 promarginal teeth and one large retromarginal tooth with a bifurcated tip (Liu *et al.* 2017). Leg formula: I, IV, III and II. Front legs elongated with massive femur and long and rigid spines on metatarsi and tibiae I (Prószyński 2009). Other legs lack spines (Logunov 2017). Oval abdomen with 'herringbone-like' dorsal patterns at posterior region (Bohdanowicz 1987; Liu *et al.* 2017). Male palp with massive patella, prolateral femoral apophysis articulates on bulges of patella and tibia, long and slender RTA lies in alveolus of cymbium, posterior apophysis on dorsal cymbium, massive bulb with distal hook-shaped apophyses on prolateral side, triangular dorsal cymbium, short embolus broad at spiral base (Figs 1D–E, 2A–C, 4D, 5B–C, 7D–F, 8A–F, 9C–E) and developed median apophysis (Figs 1D–E, 2B) in some species (Bohdanowicz 1987). Epigyne characterized with fossae (Figs 2D–E, 3C–E, H–J, 5D–E), sculptures and pockets, arcuated rims separated by median septum, inconspicuous copulatory openings, developed copulatory duct and oval spermathecae (Bohdanowicz 1987; Liu *et al.* 2017).

Key to the male *Synagelides* of Sri Lanka

1.	MA present	2
-	MA absent	3
2.	RTA bifurcated, tips unequal	*Synagelides hortonensis* **sp. nov.**
-	RTA not bifurcated, tapering	*S. rosalindae* **sp. nov.**

3. ITA present, RTA stout . . . . . *S. lakmalii* **sp. nov.**
- ITA absent, RTA slender . . . . . *S. orlandoi* **sp. nov.**

***Synagelides hortonensis* sp. nov.**
Figs 1A–G, 2A–E, 3A–E

FIGURE 1. *Synagelides hortonensis* **sp. nov.** A, B, D, F, G, Male holotype from Horton plains (A, dorsal view; B, ventral view; D, left palp, ventral view; F, prolateral view; G, retrolateral view). C, E, male from Piduruthalagala (C, dorsal view; E, left palp, ventral view). Scale bars: A–C = 0.5 mm; D–G = 0.1mm.

Type material. Holotype: ♂ (IFS_SAL_1044), Sri Lanka, Central Province, Nuwara Eliya District, Horton Plains

National Park, 2141 m, 06°47’54”N, 80°48’51”E, 22 June 2017, leaf litter, leg. N.P. Athukorala *et al.* **Paratype:** ♀ (IFS_SAL_1045), same locality and collection data as in holotype.

Other material examined. SRI LANKA: ***Central Province***: 1♀ (IFS_SAL_1046), same locality and collection data as in type material; 1♂ (IFS_SAL_1103), Nuwara Eliya District, Piduruthalagala, 2400 m, 06°59’36”N, 80°46’15”E, 14 February 2018, leaf litter, leg. S.P. Benjamin *et al.*

Etymology. Epithet, to be treated as a Latin adjective, is given after the type locality.

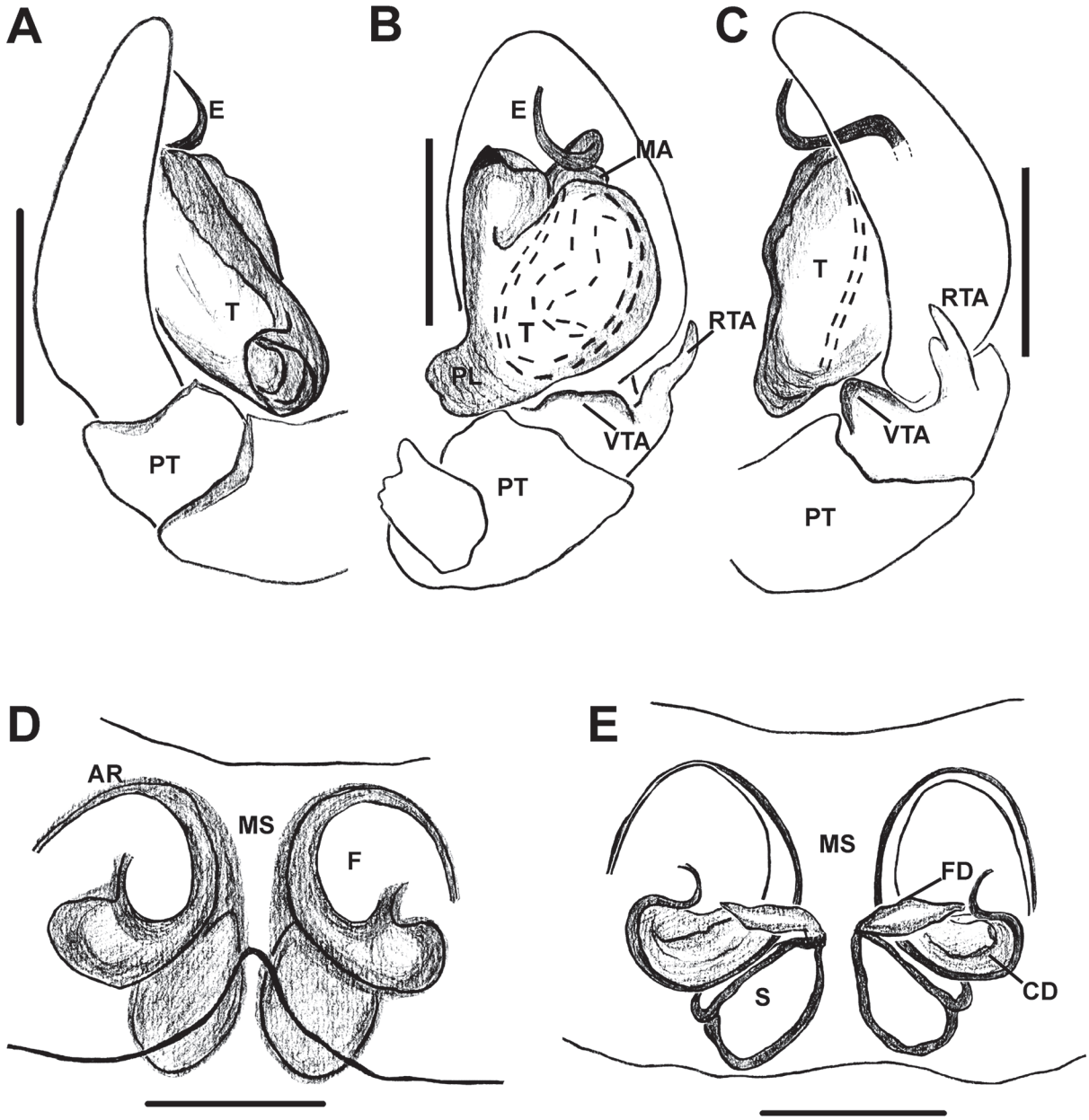

FIGURE 2. *Synagelides hortonensis* **sp. nov.** A–C, left male palp (A, prolateral view; B, ventral view; C, retrolateral view). D–E, epigyne (D, ventral view; E, vulva, dorsal view). Abbreviations: AR, arcuated rim; CD: copulatory ducts; E, embolus; F, fossa; FD, fertilization duct; MA, median apophysis; MS: median septum; PL, proximal lobe of bulb; PT, patella; RTA, retrolateral tibial apophysis; S, spermatheca; T, tegulum; VTA, ventral tibial apophysis. Scale bars: A–C = 0.2 mm; D–E = 0.1mm.

Diagnosis. The species is similar to *S. lakmalii* **sp. nov.** and *S. orlandoi* **sp. nov.** due to the short, spiraled embolus. Distinguishable from *S. lakmalii* by the presence of MA (Figs 1D–E, 2B), distal lobe of bulb with sharp tip, well-developed PL (Figs 1D–E, 2B), knob-like VTA, bifurcated RTA (Figs 1G, 2C), semicircular fossae, relatively broader MS in females (Figs 2D–E, 3C–E). Distinguished from *S. orlandoi* by the unequally bifurcate RTA, larger PL and stouter tip of the distal lobe of bulb.

Description. Male (holotype): prosoma blackish brown and carapace stippled in alcohol preserved specimens (Fig. 1A). Ocular quadrangle black, square-shaped. Cervical groove behind PME (Fig. 1A). Ocular field black and slightly raised, and eyes surrounded by black rings. Posterior prosoma adorned with black stripes originated from cervical groove. Posterior margin of prosoma rather truncated, sternum oval (Figs 1A–B). Front legs elongated with massive femur and long and stout spines on metatarsi and tibiae I. In leg I, Fm brown, other articles pale brownish yellow; other legs pale brown. Abdomen oval, dorsum blackish brown with transverse stripes, venter brownish grey bordered with blackish brown lateral sides. Palp pale brown, short cymbium. Bulb with small, triangular distal lobe, broad, prolateral proximal lobe, partial, narrow cleft in distal bulb at the retrolateral side (Figs 1D–E, 2B–C). Embolus with spiral base and small median apophysis accompanied with the base of embolus (Figs 1D–E, 2B). RTA, VTA present, VTA short, knob-like, RTA slender with bifurcated tip (Figs 1D–E, G, 2B–C). Measurements: TL 2.56, PLe 1.25, PW at PLE 1.00, AL 1.22, AW 0.76. Leg I: Fm 0.72, Pt 0.55, Tb 0.44, Mt 0.27, Ta 0.28; Leg II: Fm 0.41, Pt 0.27, Tb 0.29, Mt 0.25, Ta 0.18; Leg III: Fm 0.52, Pt 0.23, Tb 0.20, Mt 0.37, Ta 0.22; Leg IV: Fm 0.58, Pt 0.31, Tb 0.46, Mt 0.31, Ta 0.28.

Female (paratype): all characters as in male, except as follows: abdomen grey and spotted with light brown prominent four spots, lack of transverse abdominal stripes, all legs pale brownish yellow (Fig. 3A). Epigyne with two large semicircular fossae separated by comparably broader median septum (Figs 2D–E, 3C–E). CO could be found near lower margin of arcuated rim. CD short, stout with thick wall. Spermathecae two chambered, narrow, small chamber and pear-shaped, large chamber. There is conspicuous space between both spermathecae. FD lanceolate originated from anterior wall of spermathecae (Figs 2E, 3E). Measurements: TL 3.26, PLe 1.45, PW at PLE 1.33, AL 1.42, AW 0.82. Leg I: Fm 0.79, Pt 0.61, Tb 0.54, Mt 0.29, Ta 0.31; Leg II: Fm 0.52, Pt 0.28, Tb 0.32, Mt 0.24, Ta 0.23; Leg III: Fm 0.58, Pt 0.27, Tb 0.24, Mt 0.39, Ta 0.28; Leg IV: Fm 0.69, Pt 0.47, Tb 0.48, Mt 0.33, Ta 0.26.

Remarks: The single specimen from Piduruthalagala is provisionally included here, until the availability of more specimens of both sexes. However, we note the following differences: in habitus, paler (Fig. 1C) than in Horton plains national park, with pale grey transverse bands on the abdomen. The copulatory organs of both specimens are very similar with a few minor differences, such as the shape of the tegulum and the MA.

***Synagelides lakmalii* sp. nov.**

Figs 3F–J, 4A–E, 5A–E

Type material. Holotype: ♂ (IFS_SAL_987), Sri Lanka, Central Province, Nuwara Eliya District, Maskeliya, Upcot, 1199 m, 06°46'N, 80°36'E, 03 October 2016, leaf litter, leg. U.G.S.L. Ranasinghe. **Paratype:** ♀ (IFS_SAL_988), same locality and collection data as in holotype.

Other material examined. SRI LANKA: ***Central Province***: 1♂, 10♀ (IFS_SAL_989–999), same locality and collection data as type material.

Etymology. This species is named after our colleague U.G. Sasanka Lakmali Ranasinghe, who collected these specimens.

Diagnosis. The species is closely related to *S. orlandoi* **sp. nov.** by palpal structure, especially by the shape of the spiraled embolus. However, it is distinguishable from this and other Sri Lankan species of the genus by the larger stouter embolus (Figs 4D, 5B–C), comparably narrower distal lobe, small proximal lobe of bulb (Figs 4D, 5B) and presence of a well-developed apical tibial apophyses (Figs 4E, 5B–C). Further, distinguishable from Sri Lankan species of the genus by the absence of a MA (except for *S. orlandoi*).

Description. Male (holotype): in alcohol preserved specimens, prosoma sandy brown and carapace stippled (Fig. 4A). Black, square-shaped ocular quadrangle. Cervical groove behind PME. Eyes surrounded by black rings. Posterior prosoma truncated (Fig. 4A). Oval sternum (Fig. 4B). Extended front legs with enlarged femur, long and rigid spines on metatarsi and tibiae I. In leg I, Fm brown, basal half of Tb, Mt light yellow, tinged with brown, Pt and Ta pale yellow, remaining leg articles pale yellow tinged with brown. Abdomen oval, dorsum with yellowish-grey and pale-yellow transverse bands, shallow constriction at the middle dorsum. Venter pale yellow with yellowish-grey lateral sides (Fig. 4B). Palp brownish yellow, short cymbium. Bulb with narrow distal lobe, broad proximal lobe at the prolateral side, narrow, longitudinal cleft in distal bulb at the retrolateral side (Figs 4D, 5B). Embolus comparably long, spiral broad base (Figs 4D, 5B–C). Tibia with RTA, VTA, DTA; VTA short, leaf-like

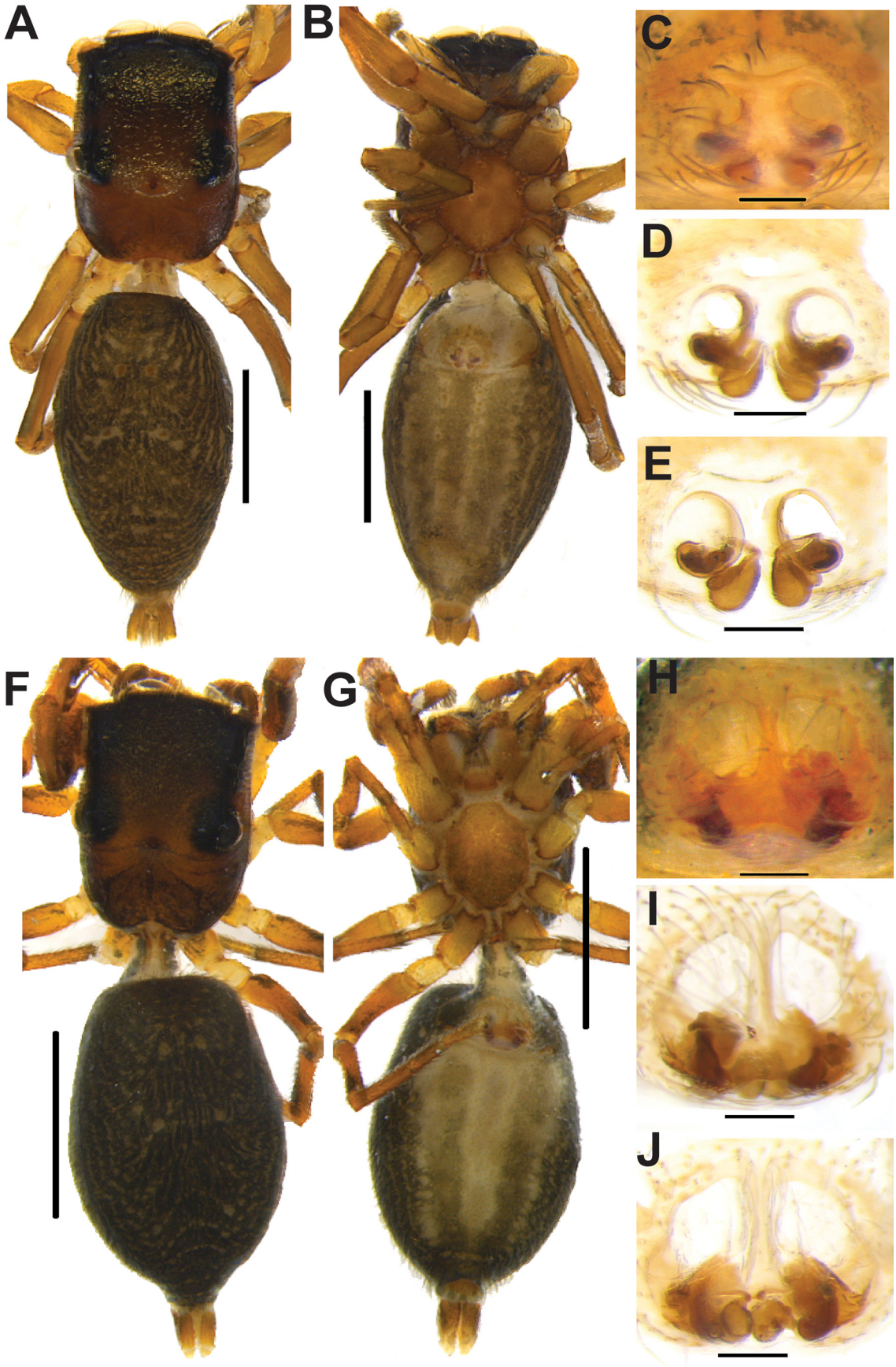

FIGURE 3. *Synagelides hortonensis* **sp. nov.** A–B, female (A, dorsal view; B, ventral view); C–E, epigyne (C, ventral view; D, cleared, ventral view; E, vulva, dorsal view). *Synagelides lakmalii* **sp. nov.** F–G, female (F, dorsal view; G, ventral view); H–J (H, ventral view; I, cleared, ventral view; J, vulva, dorsal view). Scale bars: A–B, F–G = 1 mm; C–E, H–J = 0.1 mm.

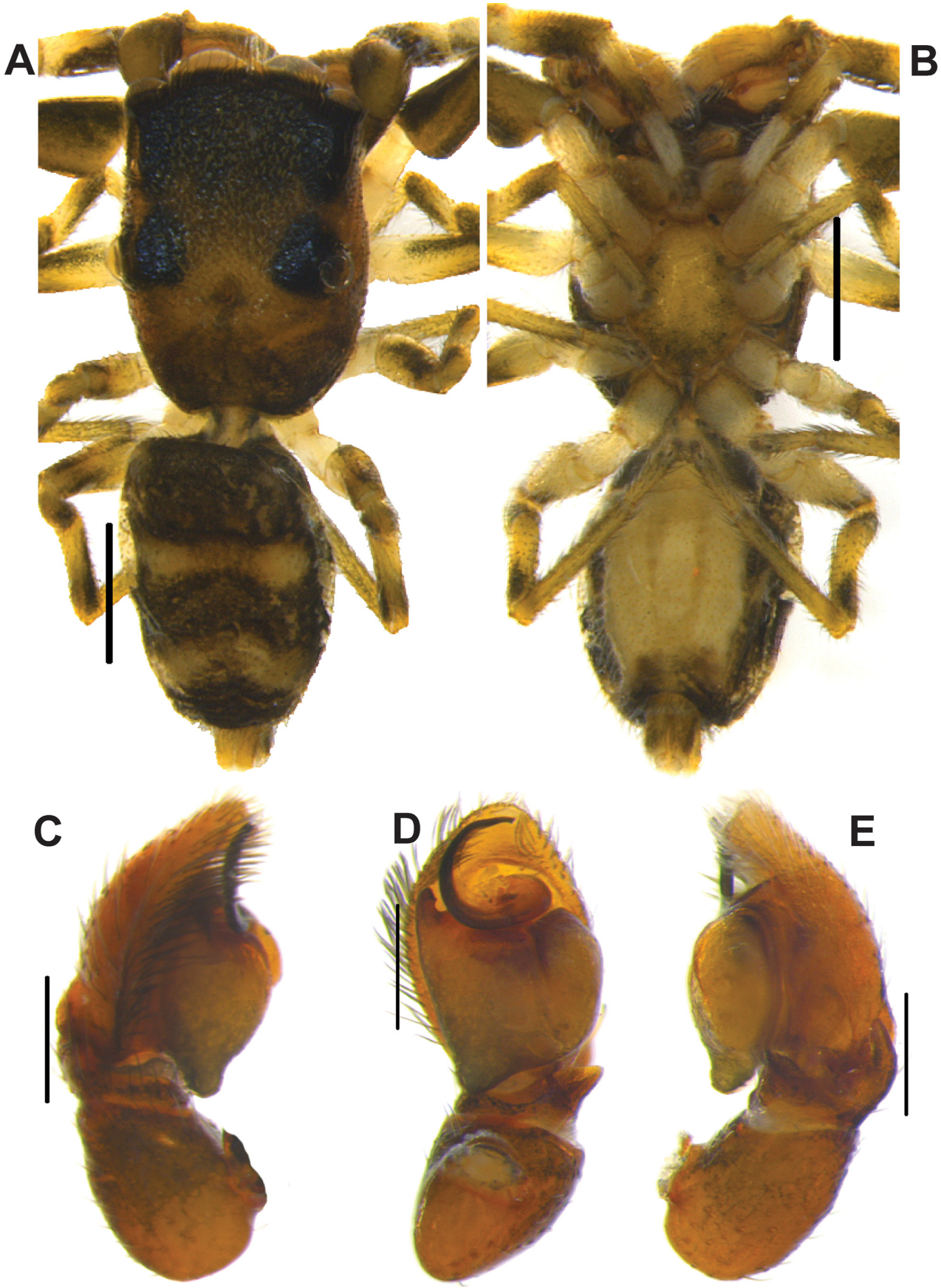

FIGURE 4. *Synagelides lakmalii* **sp. nov.** A–B, male (A, dorsal view; B, ventral view); C–E, left palp (C, prolateral view; D, ventral view; E, retrolateral view). Scale bars: A–B = 0.5 mm; C–E = 0.2 mm.

(lanceolate), RTA slender hook-shaped, relatively less sclerotized; DTA digitiform, curved, blunt tip (Figs 4D–E, 5B–C). Measurements: TL 2.49, PLe 1.10, PW at PLE 0.90, AL 1.17, AW 0.70. Leg I: Fm 0.69, Pt 0.51, Tb 0.48, Mt 0.21, Ta 0.24; Leg II: Fm 0.39, Pt 0.21, Tb 0.24, Mt 0.27, Ta 0.15; Leg III: Fm 0.42, Pt 0.21, Tb 0.18, Mt 0.30, Ta 0.18; Leg IV: Fm 0.54, Pt 0.47, Tb 0.42, Mt 0.37, Ta 0.21.

Female (paratype): all characters as in male, except as follows: abdomen with poorly developed 'herringbone-like' dorsal patterns (Fig. 3F), lack of pale-yellow transverse abdominal stripes, brownish yellow legs, palps. Epigyne with two large and ovoid fossae separated by narrow median septum (Figs 3H–J, 5D–E). CO inconspicuous, CD short, stout with thick wall. Spermathecae oval, adpressed to each other (Figs 3J, 5D–E). FD lanceolate originated from antero-mid wall of spermathecae (Figs 3J, 5E). Measurements: TL 3.73, PLe 1.20, PW at PLE 0.84, AL 1.59, AW 0.99. Leg I: Fm 0.75, Pt 0.54, Tb 0.51, Mt 0.24, Ta 0.24; Leg II: Fm 0.45, Pt 0.27, Tb 0.30, Mt 0.27, Ta 0.18; Leg III: Fm 0.45, Pt 0.24, Tb 0.21, Mt 0.30, Ta 0.21; Leg IV: Fm 0.61, Pt 0.38, Tb 0.54, Mt 0.30, Ta 0.21.

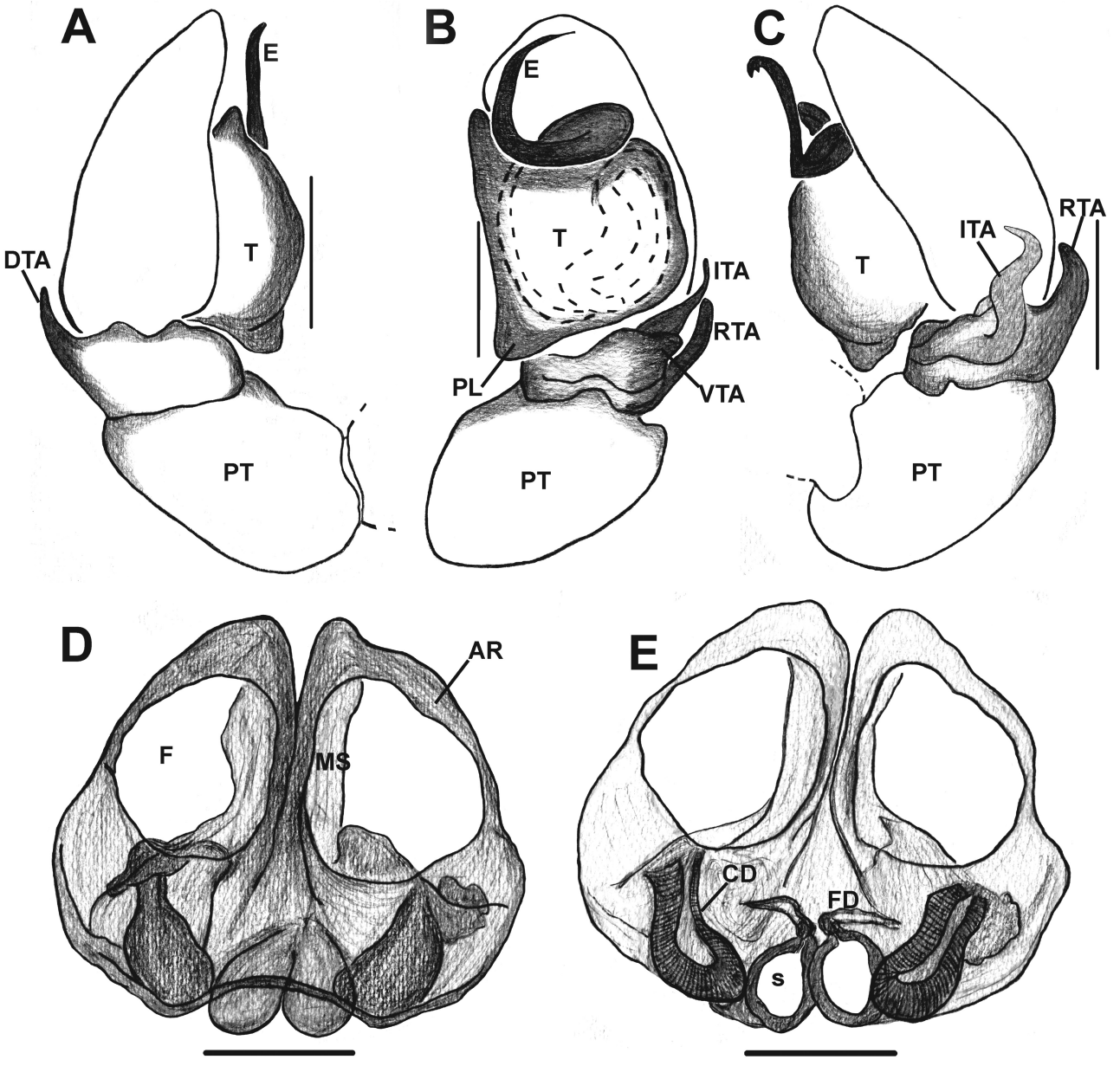

FIGURE 5. *Synagelides lakmalii* **sp. nov.** A–C, left male palp (A, prolateral view; B, ventral view; C, retrolateral view); D–E, epigyne (D, ventral view; E, vulva, dorsal view). Abbreviations: AR, arcuated rim; CD, copulatory ducts; DTA, dorsal tibial apophysis; E, embolus; F, fossa; FD, fertilization duct; ITA, intermediate tibial apophysis; MS: median septum; PL, proximal lobe of bulb; PT, patella; RTA, retrolateral tibial apophysis; S, spermatheca; T, tegulum; VTA, ventral tibial apophysis. Scale bars: A–C = 0.2 mm; D–E = 0.1mm.

***Synagelides rosalindae* sp. nov.**
Figs 6A–D, 7A–F, 8A–C

Type material. Holotype: ♂ (IFS_SAL_253), Sri Lanka, North Central Province, Anuradhapura District, Kodigala Summit, 716 m, 08°06'33"N, 80°39'16"E, 28 June 2011, hand collection, leg. S.P. Benjamin & S. Batuwita. **Paratype:** ♂ (IFS_SAL_254), same locality and collection data as in holotype.

Etymology. The species is named after Rosalind Senior, the heroine of the play As You Like It by William Shakespeare. Generally noted for her resilience, quick wit, and beauty.

Diagnosis. The species is closely related to *S. hortonensis* **sp. nov.** in the palpal structure. However, it is distinguished from this and other Sri Lanka species of the genus by the stout, compact embolus, presence of well-developed MA, absence of PL (Figs 7D, 8B) and well-developed apical tibial apophyses (Figs 7F, 8B–C).

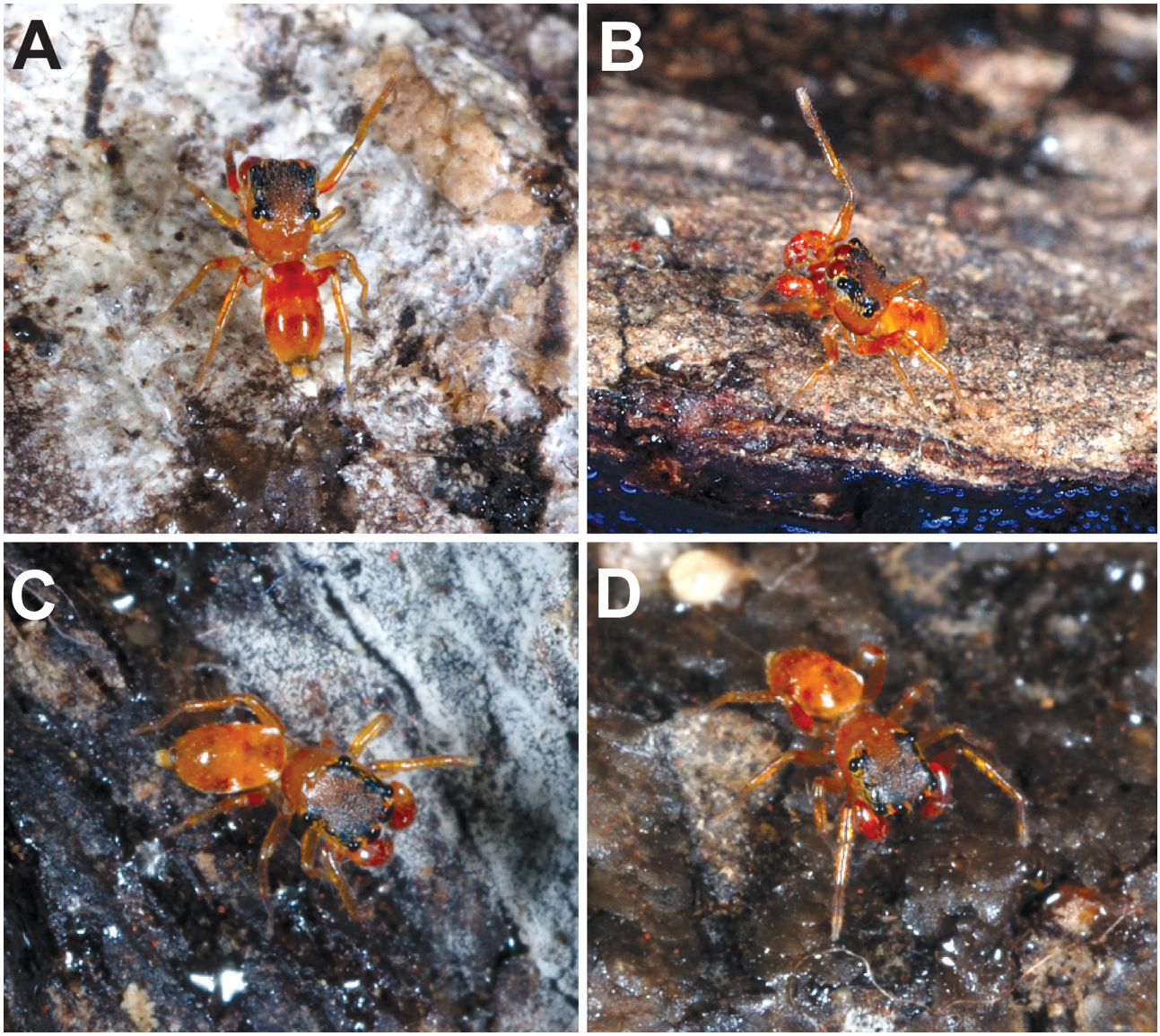

FIGURE 6. *Synagelides rosalindae* **sp. nov.** A–D, male from Kodigala Summit in life.

Description. Male (holotype): in life, orange prosoma with stippled carapace. Anterior and posterior eye rows covered with pale yellow bristles (Figs 6A–D). Eye field black and rather elevated and eyes surrounded by black regions. Cervical groove inconspicuous (Fig. 7A). Sternum broad oval (Fig. 7B). In leg I, Fm orange with brown distal region, other articles brownish orange, other legs brownish orange (Figs 6A–D). Abdomen oval, orange dorsum with black transverse stripe near spinnerets, venter pale yellow with black stripe near spinnerets (Figs 6A–D). Palp brownish orange, short cymbium, bulb without prominent proximal lobe (Figs 7D, 8B). Median apophysis present, small, embolus stout, broad base, tip rest at the center (Figs 7E–F, 8A–C). VTA broad, knob-like, RTA broad with

pointed tip, curved ventrally (Figs 7D–F, 8B–C). Measurements: TL 2.24, PLe 0.96, PW at PLE 0.82, AL 1.11, AW 0.73. Leg I: Fm 0.63, Pt 0.49, Tb 0.44, Mt 0.29, Ta 0.22; Leg II: Fm 0.41, Pt 0.24, Tb 0.24, Mt 0.25, Ta 0.18; Leg III: Fm 0.45, Pt 0.24, Tb 0.20, Mt 0.34, Ta 0.19; Leg IV: Fm 0.56, Pt 0.31, Tb 0.51, Mt 0.32, Ta 0.20.

Female: Unknown.

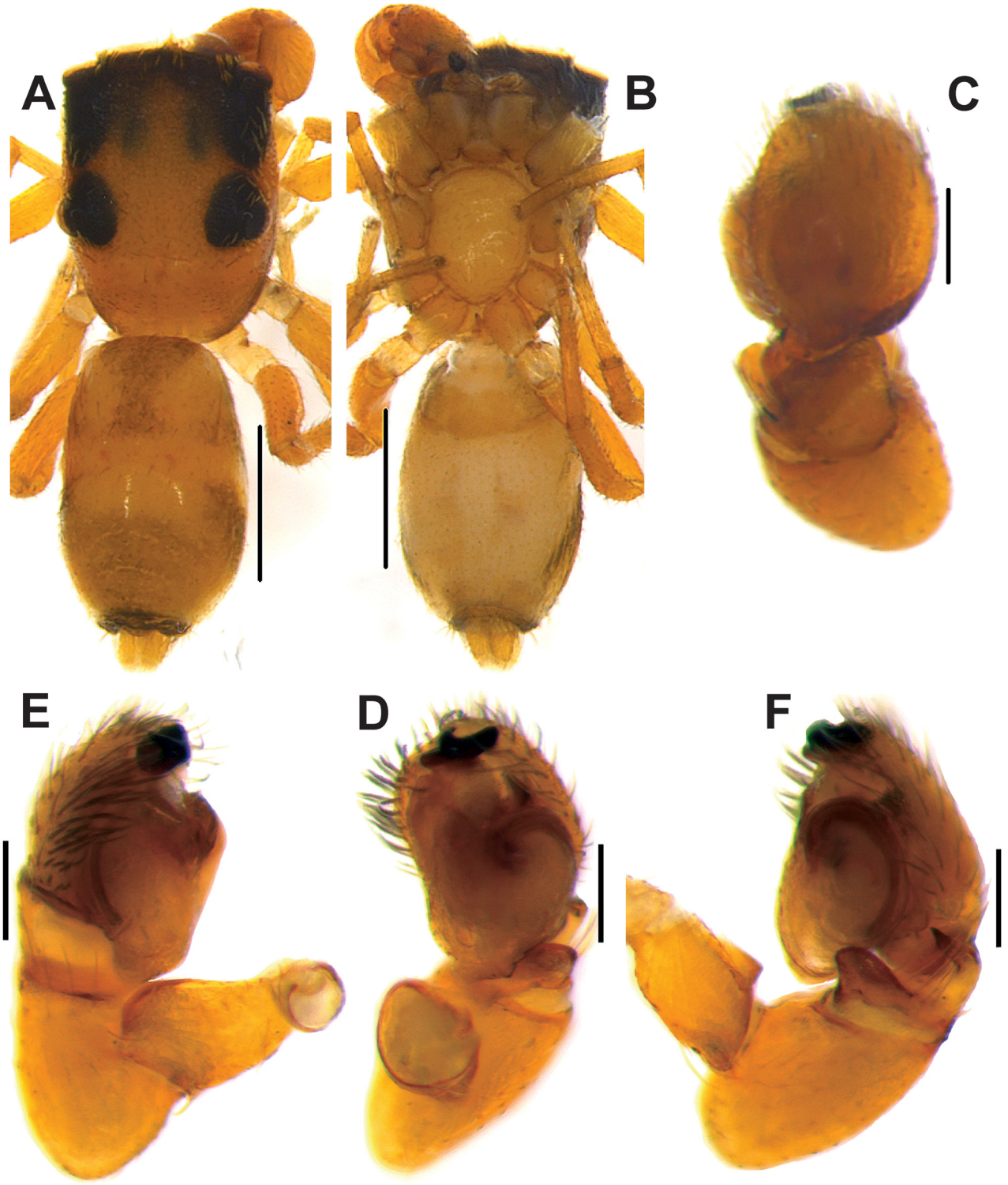

FIGURE 7. *Synagelides rosalindae* **sp. nov.** A–B, male (A, dorsal view; B, ventral view); C–F, left palp (C, dorsal view; D, prolateral view; E, ventral view; F, retrolateral view). Scale bars: A–B = 0.5 mm; C–F = 0.1 mm.

***Synagelides orlandoi* sp. nov.**
Figs 8D–F, 9A–E

Type material. Holotype: ♂ (IFS_SAL_986), Sri Lanka, Sabaragamuwa Province, Rathnapura District, Sinharaja Forest Reserve, Kudawa, 521 m, 06°24'58.26"N, 80°25'25"E, 11–13 October 2016, leaf litter, leg. N.P. Athukorala *et al.*

Etymology. The species is named after Orlando de Bois, who at first sight falls in love with Rosalind. He is brave, chivalrous, tender, modest, smart, strong, handsome and beloved by all. However, he is unable to express his love for Rosalind, before he leaves to the forest of Arden.

Diagnosis. The species is closely related to *S. lakmalii* **sp. nov.** by the palpal structure, especially by the shape of the embolus. However, it can be distinguishable by its modified embolus tip (Figs 8E–F, 9C–E), and the shape of the RTA, relatively longer and slender (Figs 8E–F, 9D–E). Distinguishable by the absence of the MA from *S. hortonensis* **sp. nov.** and *S. rosalindae* **sp. nov.**

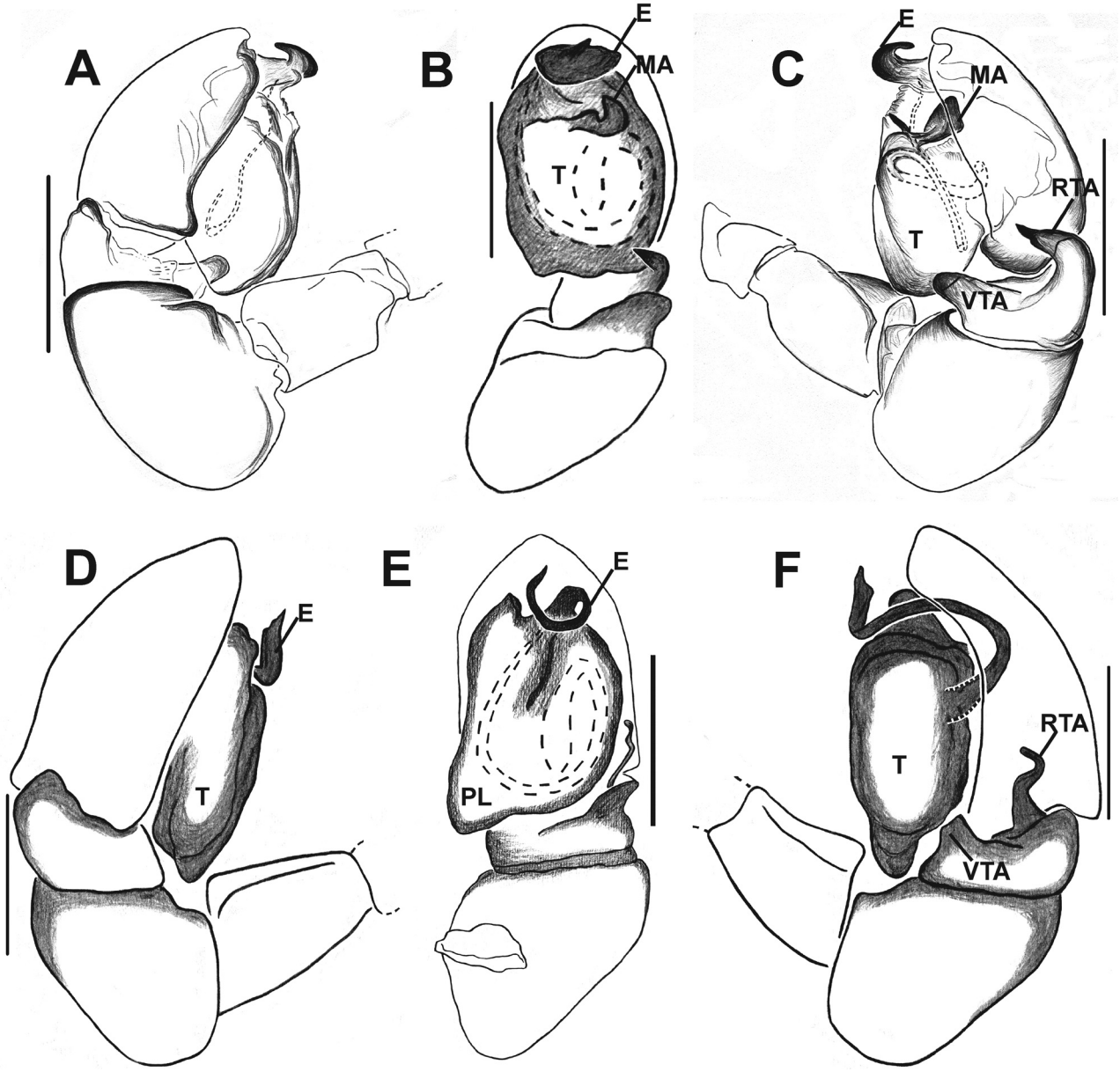

FIGURE 8. *Synagelides rosalindae* **sp. nov.** A–C, left male palp (A, prolateral view; B, ventral view; C, retrolateral view). *Synagelides orlandoi* **sp. nov.** D–F, left male palp (D, prolateral view; E, ventral view; F, retrolateral view). Abbreviations: E, embolus; MA, median apophysis; PL, proximal lobe of bulb; RTA, retrolateral tibial apophysis; T, tegulum; VTA, ventral tibial apophysis. Scale bars: A–F = 0.2 mm.

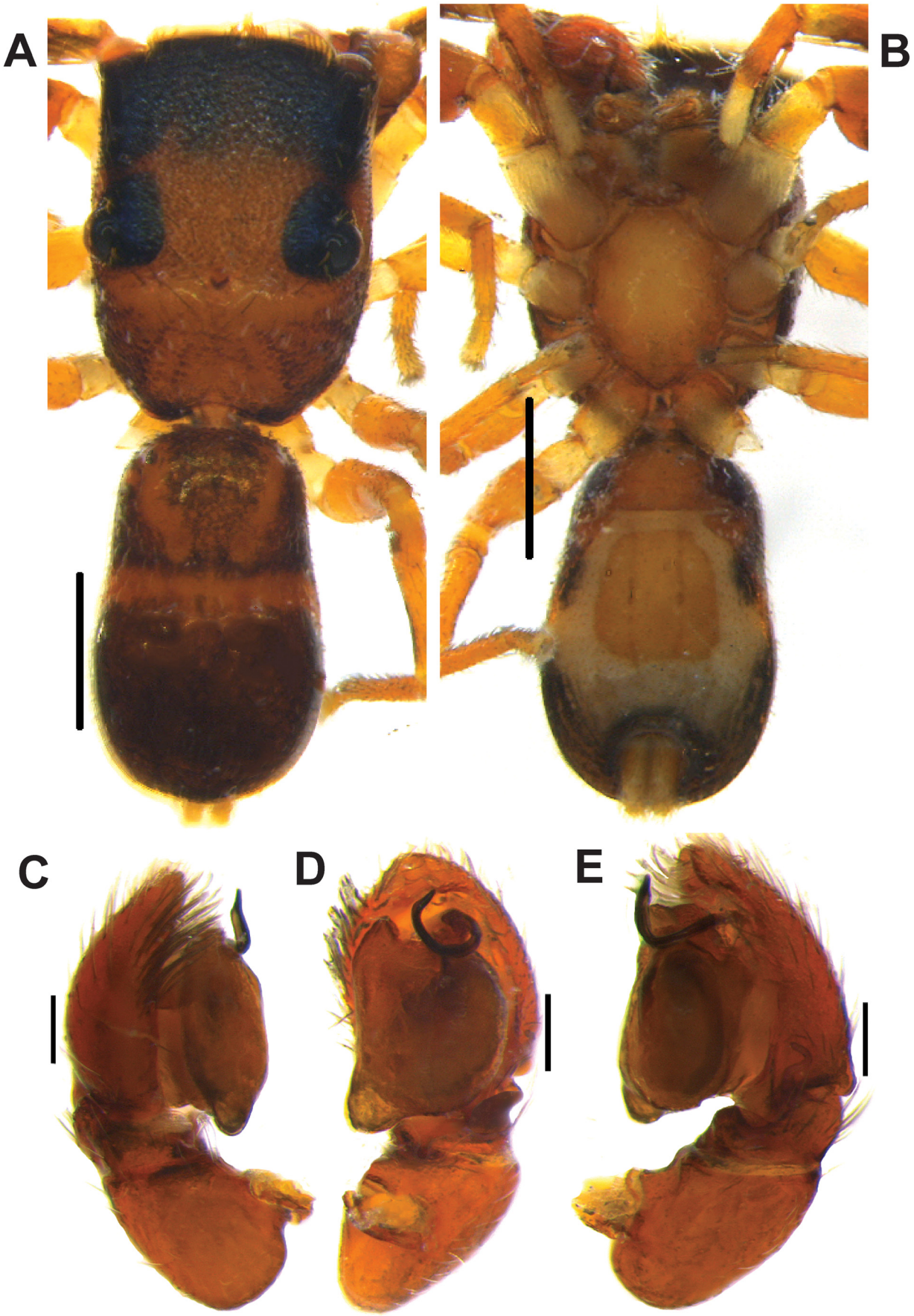

FIGURE 9. *Synagelides orlandoi* **sp. nov.** A–B, male (A, dorsal view; B, ventral view). C–E left palp (C, prolateral view; D, ventral view; E, retrolateral view). Scale bars: A–B = 0.5 mm, C–E = 0.1 mm.

Description. Male (holotype): prosoma fawn and carapace stippled in alcohol preserved specimens (Fig. 9A). PME surrounded by broad black blotches. Ocular quadrangle black, square-shaped. Ocular field slightly raised. Cervical groove conspicuous behind PME. Posterior prosoma with partially developed black stripes (Fig. 9A). Posterior border of prosoma truncated. Sternum oval (Fig. 9B). Front legs elongated with massive femur and long and stout spines on metatarsi and tibiae I. In leg I, all segments pale brownish yellow, other legs pale yellow. Abdomen pear-shaped, anterior portion narrower than posterior region. Dorsum blackish brown with pale brown transverse stripe at the middle and pale brown blotches at the anterior portion (Fig. 9A). Venter pale white bordered with blackish brown lateral sides and large, yellow median patch (Fig. 9B). Palp pale brown with short cymbium. Bulb with crest-like distal lobe and broad, prolateral proximal lobe. Partial, narrow retrolateral split in distal bulb (Figs 8E–F, 9D). Median apophysis absent, origin of embolus from mid-retrolateral side of bulb and forms a semicircular curve with small finger-like tip (Figs 8E–F, 9C–E). Tibia with RTA, VTA; VTA short, leaf-like, RTA slender and shape like a 'question mark' (Figs 8E–F, 9D–E). Measurements: TL 2.39, PLe 1.16, PW at PLEs 0.95, AL 1.44, AW 0.85. Leg I: Fm 0.69, Pt 0.58, Tb 0.52, Mt 0.28, Ta 0.24; Leg II: Fm 0.49, Pt 0.26, Tb 0.28, Mt 0.24, Ta 0.20; Leg III: Fm 0.52, Pt 0.20, Tb 0.32, Mt 0.30, Ta 0.21; Leg IV: Fm 0.56, Pt 0.36, Tb 0.55, Mt 0.30, Ta 0.24.

Female: Unknown.

Discussion

These litter dwelling salticids are small to medium size in length (2–6mm) and are cryptically colored, ranging from sandy brown to black in colour, to blend on their environments in order to capture prey and defend themselves from predators (Dhali *et al.* 2017). Species of *Synagelides* show numerous adaptations for their habitats, including darker body coloration, ant-typical behavior (Fig. 6B) and ant-like body form (Figs 6A, B). Further, all species of the genus possess elongated front legs with rigid spines, possibly for burrowing into litter (Szűts 2003; Logunov & Hereward 2006).

Synagelides is considered polyphyletic, consisting of a collection of unrelated species (Bohdanowicz 1987). This view is shared here. However, the Sri Lankan species of the genus might be sibling species. Further, Logunov (2017) pointed out that the phylogenetic placement of *Synagelides* is problematic due to their close affinity with the genus *Agorius* and ambiguous circumscription of both genera. Prószyński (2009) provided putative diagnostic characters for *Agorius*, including almost equal size of patella I and femur I, conspicuous abdominal constriction in both sexes and longer spines on metatarsi I. However, some species of *Synagelides* also share these diagnostic characters and thus complicating accurate generic placement. Both genera are badly in need of revision and eventual phylogenetic placement (Logunov & Hereward 2006).

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