

The mygalomorph spider genera *Phyxioschaema* Simon and *Stenygrocerus* Simon (Dipluridae: Ischnothelinae)

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Summary

The Palaearctic *Phyxioschaema raddei* Simon, 1889, and the New Caledonia *Stenygrocerus silvicola* (Simon, 1889), are redescribed from the types and further material, and a new species, *S. annulata*, also from New Caledonia, is described. The affinities of the two genera are discussed. *Phyxioschaema* resembles *Evagnus*, and *Stenygrocerus* is most closely related to Australian species presently placed in *Cethegus* Thorell.

Introduction

During a study on the Australian Ischnothelinae, the examination of types of the related but poorly described genera, *Phyxioschaema* and *Stenygrocerus*, was necessary. Main (1960) synonymised *Stenygrocerus* with the Australian genus *Cethegus* because the males of two species, although not the type-species of the respective genera, lacked tibial apophyses. However, at that time, a male identified by Berland (1924) was believed by Main (1960) to be correctly attributed to the type-species of *Stenygrocerus*, *S. silvicola* (Simon). For the first time, males of *Phyxioschaema raddei* Simon and a new species, *Stenygrocerus annulata*, are described; the males of *Cethegus lugubris* Thorell and *Stenygrocerus silvicola*, each the type-species, remain unknown.

Abbreviations are standard for those used in the Araneae; however, the following are added: PMS, posterior median spinnerets; PLS, posterior lateral spinnerets; STC, superior tarsal claw; ITC, inferior tarsal claw. All measurements are in mm, except eye measurements which are in graticule units.

Subfamily ISCHNOTHELINAE Cambridge, 1897

Tribe Evagrini Raven, 1979

Genus *Phyxioschaema* Simon, 1889

Phyxioschaema Simon, 1889b, p. 385. Type-species by monotypy, *P. raddei* Simon, 1889.

Characters of genus: Hirsute, low carapace. Fovea pit-like. Eight eyes, front row procurved, back row recurved. Chelicerae geniculate; teeth only on pro-margin of furrow. Labium wider than long. Maxillae longer than wide. Sternum longer than wide; six small marginal sigilla; labiosternal sigilla broad. Numerous spines on tarsi. Preening combs absent. Superior tarsal claw with one row of teeth. Trichobothria in two rows on tibia, one straight row on metatarsi and tarsi. Four spinnerets; apical segment of posterior laterals flagellate, basal segment subsegmented.

First tibia of males incrassate, spinose; second tibia of males with large spine-bearing spur medially; metatarsus II forms two ridges. Male palpal bulb simple pyriform with elongate embolus.

Distribution and Remarks: *Phyxioschaema* is a monotypic genus known only from Ain-Dor, Transcaspia, southern U.S.S.R. *Phyxioschaema* is unique in the form of the tibial spur and metatarsal apophysis on the second leg of males (Fig. 7). In the possession of a well developed tibial spur on the second leg, *Phyxioschaema* is most closely related to *Evagnus* (Simon, 1903).

Phyxioschaema raddei Simon (Figs. 1-7, Table 1)

P. raddei Simon, 1889, p. 385; Simon, 1892, p. 185; Simon, 1903, p. 968.

Type: Holotype ♀, Ain-dor, Transcaspia, southern U.S.S.R. In Muséum National d'Histoire Naturelle, Paris, no. 17.889.

Holotype Female

Since the holotype female is damaged and lacks an abdomen, only an abbreviated description is possible. However, a male later added without further data to the holotype's vial by Simon is in good condition and is described in full.

Colour in alcohol: Carapace, chelicerae and legs light tan. Anterior ventral edges of maxilla and labium white, otherwise concolorous with carapace.

Carapace: Length 5.83, width 3.84. Uniformly

covered with long golden brown hairs about 0.4 long. Fovea a broad open pit. One pair of foveal bristles, with 3-4 pairs of finer bristles behind in fovea.

Eyes: Eight in 2 rows. Group is twice as long as wide and occupies 0.4 times head width. Front row procurved; back row recurved. MOQ 1.64 times wider behind than in front and 1.1 times wider in front than long. ALE, PME, PLE, 1.8, 1.1, 1.5 times the diameter of an AME across. Eye interspaces: AME-AME, 5; AME-ALE, 4; ALE-PLE, 3; PME-PLE, 2.

Chelicerae: Genuiculate; clothed with numerous fine bristles not obscuring cuticle. Eleven teeth of irregular size and spacing on promargin, basally with about 20 fine granules and 10 coarser granules. Fang stout, tapering.

Labium: 0.92 wide, 0.42 long. Clothed only with about 20 long bristles. Separated from sternum by a broad continuous sigilla 0.12-0.20 across.

Maxillae: 1.48 long, 0.92 wide. Serrula well developed.

Sternum: Damaged.

Legs (Table 1): 4312. Only stout bristles on femora and patellae. Tarsal spines numerous and forming roughly three rows: one row lateroventrally on each side and one irregular row midventrally.

Spines: *Leg I*: femur, p1; patella, p1; tibia, p1, v5; metatarsus, v14; tarsus, v12. *Leg II*: femur, p1; patella, p2; tibia, p2, v5; metatarsus, v14; tarsus, v16. *Leg III*: femur, p2, r2; patella, p2, r1; tibia, p2, d2, r2, v5; metatarsus, p3, d2, r4, v12; tarsus, d1, v12. *Leg IV*: femur, p1, r1; patella, p2, r1; tibia, p2, d2, r2, v5; metatarsus, p4, d2, r3, v13; tarsus, d2, v14. *Palp*: tibia, v7; tarsus, v13.

Claws: STC with 10 teeth; ITC with four long teeth; palpal claw with 9 teeth.

Trichobothria: Two rows, each of 9, on all tibiae. 8-10 in a slightly irregular line on metatarsi and tarsi; tarsal organ present.

Male

Carapace length 4.40, width 3.28. Abdomen length 3.84, width 3.04. Carapace and chelicerae yellow-brown; first pair of legs darker, rest concolorous with carapace. Abdomen uniformly brown, book-lung covers yellowish.

Carapace (Fig. 1): Longer than wide, uniformly but tightly covered with fine brown hairs. Fovea a longitudinal pitlike depression. One pair of foveal bristles.

Eyes (Fig. 5): On a low tubercle. Eye group 2.18 times wider than long, and occupies 0.46 times head width. Front row procurved; back row slightly recurved. MOQ 1.64 times wider behind than in front and as wide in front as long. ALE, PME, PLE, 2.2, 1.4, 1.6 times an AME respectively. Eye interspaces: AME-AME, 4; AME-ALE, 2; ALE-PLE, 3; PME-PLE, 2.

Chelicerae: Small, genuiculate; fang robust. Clothed with fine bristles. 10-12 strong teeth on promargin, basally with numerous granules.

Labium (Fig. 6): 0.64 wide, 0.24 long. Separated from sternum by deep, rough rectangular depression, 0.25 across.

Maxillae (Fig. 6): 0.96 long, 0.56 wide. Serrula well developed.

Sternum (Fig. 6): 2.24 long, 1.72 wide. Cordate. Six sigilla. Length of posterior, middle, anterior as % of sternal width, 7.3, 7.3, 9.8. All sigilla small, touching margin. Margins inclined. Covered with erect bristles rising from low pustules on the sternum. Lyriform organs absent.

Legs (Table 1): 4321. Covered uniformly with long brown bristles. Retrolaterally on distal femur I, and prolatral ventral edge of femur II with densely spaced short thorn-like bristles; an almost linear group of similar bristles on prolatral tibia II (Fig. 7). Spines long and strong on tibia I (Fig. 2), thorn-like

	I	II	III	IV	Palp
Femur	3.51 (2.33)	3.51 (2.33)	3.42 (2.27)	4.12 (2.83)	2.63 (1.33)
Patella	1.93 (1.40)	2.11 (1.33)	2.02 (1.23)	2.46 (1.50)	1.32 (0.67)
Tibia	2.81 (1.67)	2.37 (1.60)	2.19 (1.50)	2.63 (2.07)	1.75 (0.83)
Metatarsus	2.19 (1.60)	2.11 (1.84)	2.81 (1.83)	2.46 (2.60)	—
Tarsus	1.32 (1.03)	1.49 (1.10)	1.75 (1.40)	1.40 (1.57)	1.75 (0.53)
Total	11.76 (8.03)	11.59 (8.20)	12.19 (8.23)	13.07 (10.57)	7.45 (3.36)

Table 1: Leg measurements of *Phyxioschaema raddei*: ♀ holotype; male in parentheses.

on metatarsus I and II. Tibia I incassate with numerous spines; metatarsus I tapering cylindrical with strong midventral spine at one third length of metatarsus. Tibia II (Fig. 7) incassate with large median ventral cuticular spur with flat bilobular tip, retrolateral lobe with two immovable spines. Metatarsus II proximoventrally with two parallel ridges forming a deep medial trough. Patella I with several closely spaced spines on retrolateral edge.

Palp (Fig. 3): With 2 tarsal spines. Bulb pyriform, embolus elongate.

Spines: *Leg I:* femur, p1, d6; patella, r4; tibia, p1, v19; metatarsus, v10; tarsus, v8. *Leg II:* femur, p1, d4, r3; patella, p2; tibia, spur; metatarsus, p1, v13; tarsus, v21. *Leg III:* femur, p3, d2, r3; patella,

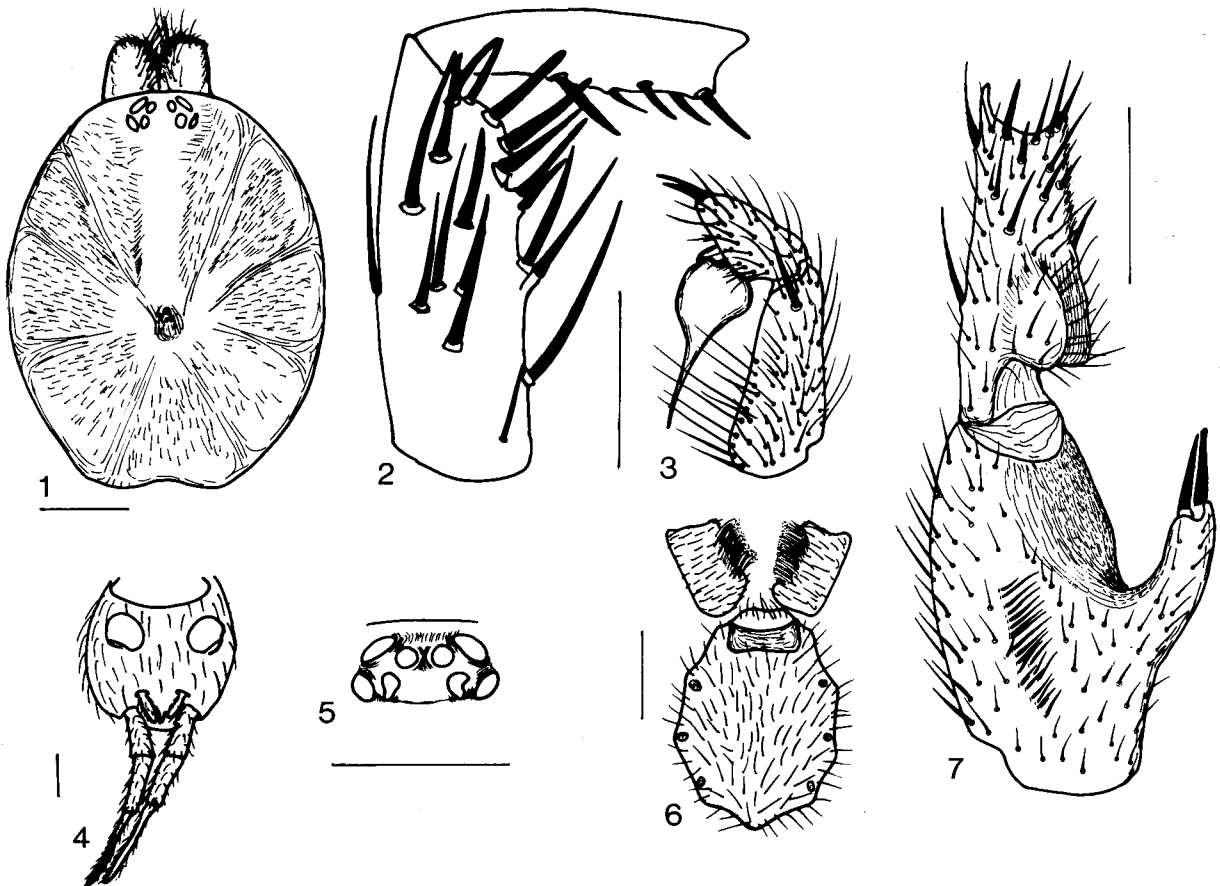
p2, r1; tibia, p2, d2, r2, v4; metatarsus, p4, d3, r3, v12; tarsus, v11. *Leg IV:* femur, p1, d4, r1; patella, p2, r1; tibia, p2, d2, r2, v6; metatarsus, p6, r3, v9; tarsus, v18. **Palp:** femur, d3; patella, d3; tibia, v4; tarsus, 2.

Claws: STC similar, each with 7-9 teeth in one row diagonally crossing claw; ITC with 3-5 teeth.

Trichobothria: Two rows, each of 8-9, on all tibiae. A single straight row of 5-6 on metatarsi and tarsi.

Abdomen: With brown bristles about 1 mm long, and short golden hairs.

Spinnerets (Fig 4): Four. PLS with elongate pseudosegmented distal segment. PMS 0.72 long, and 0.12 in diameter. Length of basal, middle, apical



Figs. 1-7: *Phyxioschaema raddei* Simon, male. 1 Carapace; 2 Left leg I, tibia and metatarsus, prolateral; 3 Left palp, tibia and tarsus, retrolateral; 4 Abdomen and spinnerets, ventral; 5 Eyes; 6 Sternum, labium and maxillae; 7 Left leg II, tibia and metatarsus, proventral. All scale lines = 1 mm.

and total segments of PLS 1.44, 1.12, 2.00, 4.56 respectively.

Genus *Stenyrocercus* Simon, 1892

Stenyrocercus Simon 1892, p. 185. Type-species by monotypy, *Macrothele silvicola* Simon 1889; ♀, from New Caledonia.

Characters of genus: Eight eyes. Fovea short, curvature variable. Carapace hirsute; caput low. Cuspules entirely absent. Serrula present. Sternum with 6 small marginal sigilla. No teeth on retro-margin of cheliceral furrow. Legs without spines on tarsi I and II; preening combs present on at least some metatarsi of males and females. Spermathecae bifid.

Males (of *S. annulata*) without tibial modification; no spines on palpal tarsus; palpal bulb simple, pyriform. The diagnostic male characters are provisional because the male of *S. silvicola*, type-species, is unknown.

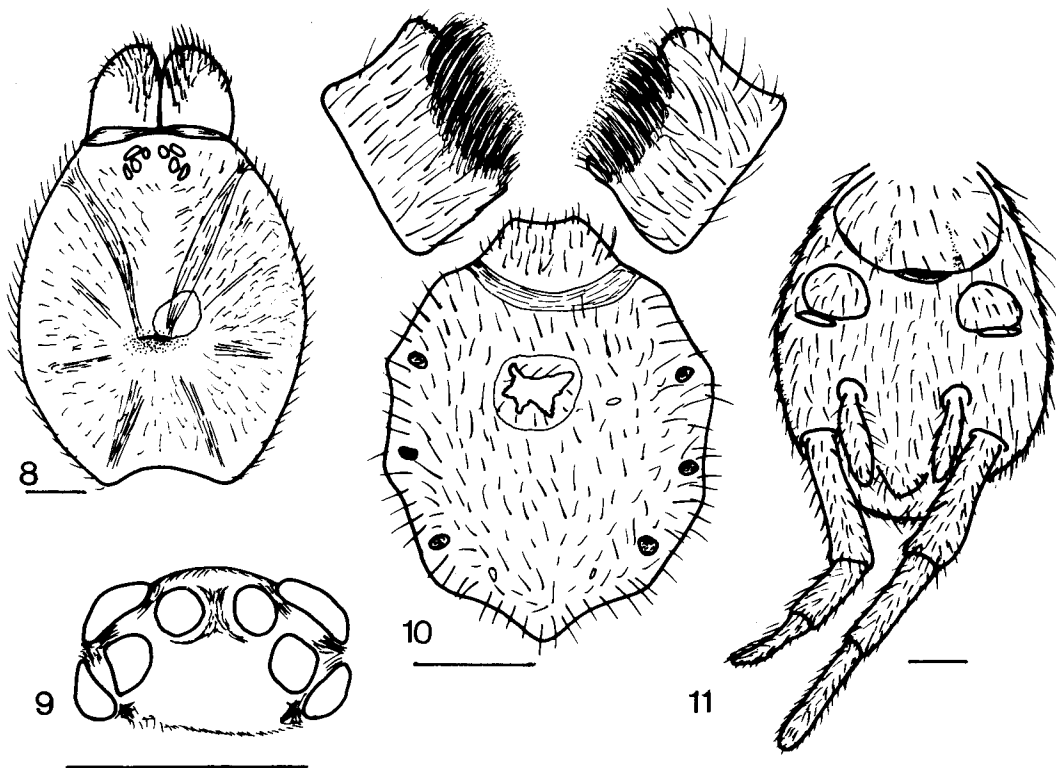
Remarks: *Stenyrocercus* is known from islands comprising New Caledonia and from Australia; species included are *S. silvicola* (Simon), *S. annulata* sp. nov. and an undescribed species (Raven, in prep.). Main (1960) was correct in transferring *Stenyrocercus broomi* Hogg to *Cethegus*. However, contrary to Main (1960), *Stenyrocercus* has no ventral spines on tarsi I and II, and the posterior lateral spinnerets are longer than the abdomen. Moreover, unlike *Cethegus* Thorell, *Stenyrocercus* has preening combs on the metatarsi.

Stenyrocercus silvicola (Simon) (Figs. 8-11, Table 2)

Macrothele silvicola Simon, 1889, p. 245.

Stenyrocercus silvicola: Simon 1892, p. 185.

Type: Holotype female. New Caledonia. Muséum National d'Histoire Naturelle, Paris.



Figs. 8-11: *Stenyrocercus silvicola* Simon, female holotype. 8 Carapace, and point of damage; 9 Eyes; 10 Sternum, labium and maxillae; 11 Abdomen and spinnerets, ventral. All scale lines = 1 mm.

Diagnosis: Abdomen almost entirely black; legs uniform colour. Preening combs present on all metatarsi. *S. silvicola* is readily distinguished from *S. annulata* by its large size, unpatterned abdomen and unmarked legs.

Holotype Female

Description supplementary to Simon 1889. Carapace 5.96 long, 4.82 wide. Abdomen 6.14 long, 4.56 wide.

Carapace (Fig. 8): Uniformly covered with fine silver hairs and black bristles, striae glabrous. 2 pairs of foveal bristles. Fovea recurved, short, 11.8% of carapace width.

Eyes (Fig. 9): Group is twice as wide as long and occupies 23% of head width. Front eye row centres form straight line; back row recurved. MOQ back width: front width: length, 65:31:29. Ratio of AME:ALE:PME:PLE, 14:24:18:20. Eye interspaces: AME-AME, 5; AME-ALE, 2; PME-PLE, 1; ALE-PLE, 0.

Chelicerae: Short, geniculate; dorsal surface with long brown bristles. Promargin of furrow with 4 large and 15 smaller teeth; 5-6 granules in one basomesal row.

Labium (Fig. 10): 1.18 wide, 0.66 long. No cuspules. Depression 0.18 across separates labium from sternum.

Maxillae (Fig. 10): 1.62 long, 1.18 wide. Serrula present.

Sternum (Fig. 10): 3.25 long, 2.72 wide. 6 sigilla, all oval and marginal; length posterior, middle, anterior sigilla as % of sternum width, 4.3, 4.3, 3.3. 2 pairs lyriform organs.

Legs (Table 2): 4312. Covered with long brown bristles. A pair of preening combs on distal ventral metatarsi I-III, and one comb of 6-7 "teeth" on

	I	II	III	IV	Palp
Femur	3.80	3.86	3.80	3.97	2.93
Patella	2.41	2.46	2.24	2.24	1.73
Tibia	2.41	2.37	2.41	3.28	2.07
Metatarsus	2.44	2.81	3.28	4.31	-
Tarsus	2.41	1.75	1.89	2.07	1.73
Total	13.47	13.25	13.62	15.87	8.46

Table 2: Leg measurements of *Stenygrocerus silvicola*, ♀ holotype.

retroventral metatarsus IV.

Spines: All femora with long bristles only. **Leg I:** patella, p2; tibia, p2, v5; metatarsus, v5; tarsus, 0. **Leg II:** patella, p4; tibia, p3, v5; metatarsus, p3, v6; tarsus, 0. **Leg III:** patella, p3, r1; tibia, p3, r2, v5; metatarsus, p4, r3, v5; tarsus, v3. **Leg IV:** patella, 0; tibia, p3, d1, r3, v5; metatarsus, p4, r4, v9; tarsus, v3. **Palp:** tibia, v7; tarsus, v6.

Claws: STC each with 8 teeth in one row; ITC with 1 small straight tooth; palpal claw with 10 teeth.

Trichobothria: Two rows, each of 10, on tibiae. One straight row of 19 on metatarsi, and 10 on tarsi.

Spinnerets (Fig. 11): PMS 1.58 long, 0.53 in diameter; bases 1.4 apart. Basal, middle, distal and total segments of PLS 2.46, 2.63, 2.98, 8.07 long.

Spermathecae: Each with basal bifurcation.

Distribution: *S. silvicola* is known only from New Caledonia.

Remarks: Berland (1924) later identified more material as *S. silvicola*; however, the differences between that material and the holotype indicate that the later material represents a new taxon, described below. Males of *S. silvicola* remain unknown.

Stenygrocerus annulata sp. nov. (Figs. 12-18, Table 3)

[*Stenygrocerus silvicola*: Berland, 1924, p. 160, 174; mis-identification.]

Types: Holotype ♂, Wald. ob Oubatche, New Caledonia. AR3497. 3♀, La Foa, New Caledonia, 16.1.1912. All in Muséum National d'Histoire Naturelle, Paris. Identified by Berland (1924) as *S. silvicola*.

Diagnosis: Small spiders. Abdomen with distinct pattern dorsally and ventrally. Legs with brown annulations. Males without modifications on tibia I; palpal bulb pyriform with gradually tapering embolus. *S. annulata* differs from *S. silvicola* in the annulations on the legs, the abdominal pattern and form of the spermathecae.

Holotype Male

Carapace 4.47 long, 3.86 wide. Abdomen 4.82 long, 1.62 wide.

Colour in alcohol: Carapace and chelicerae orange-brown; caput with darker mottling; legs lighter with

brown annulations. Abdomen brown dorsally with irregular lighter patches forming paired lateral markings; ventrally brown with cream regions between book-lungs and spinnerets.

Carapace (Fig. 12): Covered with fine silver hairs; striae glabrous, 2 pairs of foveal bristles. Fovea strongly recurved and 10.4% of carapace width.

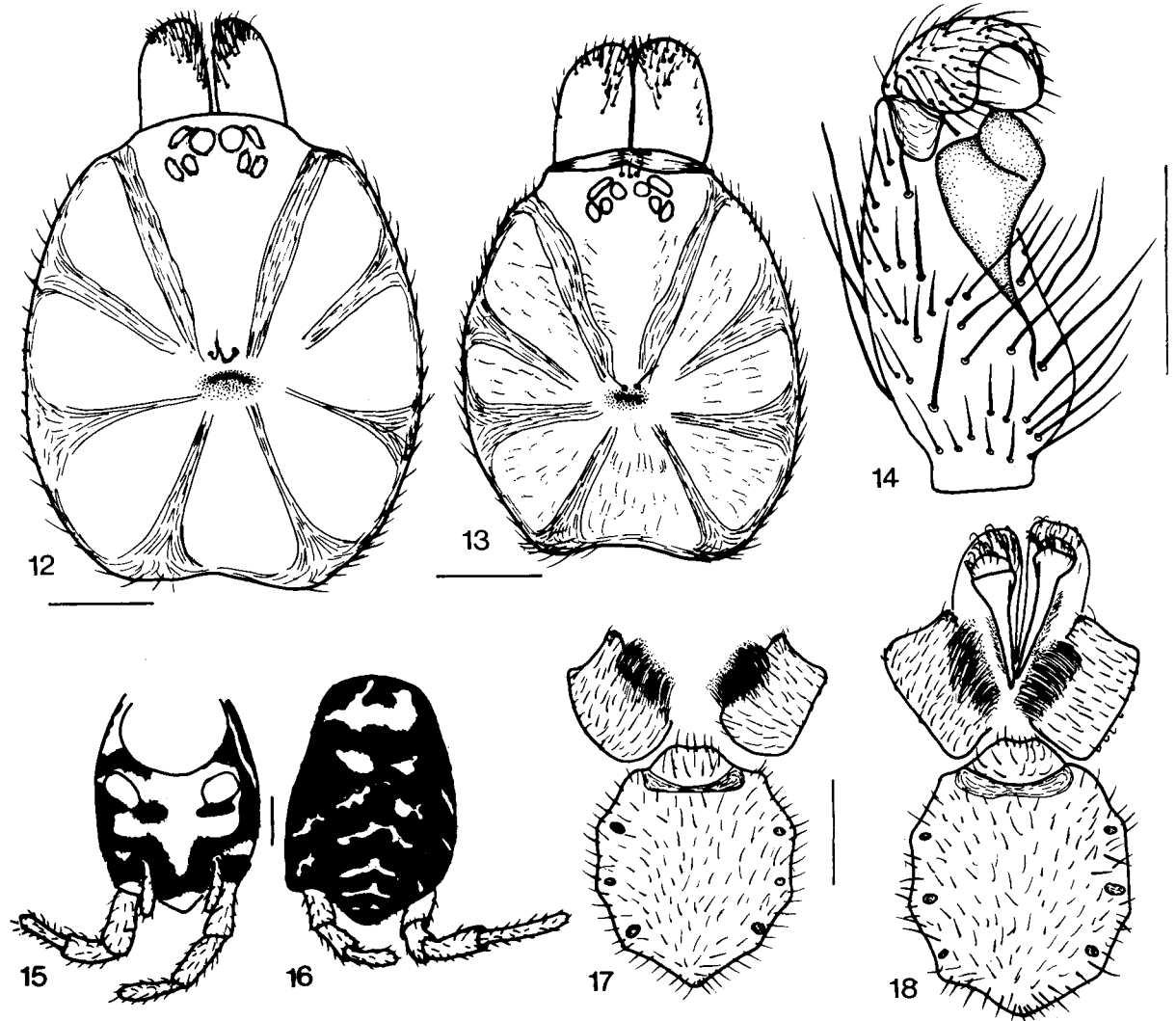
Eyes: Group is 1.76 times wider than long, and occupies 35% of head width. Front eye row centres are procurved; back row recurved. MOQ back width:

front width: length, 42:32:28. Ratio of AME:ALE: PME:PLE, 15:20:12:17. Eye interspaces: AME-AME, 3; AME-ALE and PME-PLE, 1; ALE-PLE, 3.

Chelicerae: Short, geniculate; dorsally with long brown bristles. Promargin of furrow with 6 large and 9 smaller teeth; 10 granules basomesally.

Labium (Fig. 18): 0.92 wide, 0.44 long; groove 0.07 across.

Maxillae (Fig. 18): 1.18 long, 0.66 wide. Serrula covers broad area.



Figs. 12-18: *Stenygrocerus annulata* sp. nov. 12, 13 Carapace (12 Holotype male; 13 Paratype female); 14 Left male palp, tibia and tarsus, proventral; 15, 16 Abdomen, paratype female (15 Ventral; 16 Dorsal); 17, 18 Sternum, labium and maxillae (17 Paratype female; 18 Holotype male, showing chelicerae and fangs). All scale lines = 1 mm.

	I	II	III	IV	Palp
Femur	3.25 (2.37)	2.89 (2.19)	3.25 (2.28)	3.77 (2.72)	2.19 (1.67)
Patella	1.93 (1.49)	2.02 (1.49)	1.84 (1.32)	2.02 (1.58)	1.05 (1.05)
Tibia	2.19 (1.67)	2.19 (1.32)	2.11 (1.32)	2.81 (1.75)	1.76 (1.32)
Metatarsus	2.19 (1.14)	2.54 (1.23)	3.16 (1.75)	3.95 (2.37)	—
Tarsus	1.40 (0.96)	1.67 (0.88)	1.93 (1.14)	1.84 (1.23)	0.88 (0.96)
Total	10.96 (7.63)	11.32 (7.11)	12.28 (7.81)	14.39 (9.65)	5.87 (5.00)

Table 3: Leg measurements of *Stenyrocercus annulata*: ♂ holotype; ♀ paratype in parentheses.

Sternum (Fig. 18): 2.41 long, 2.15 wide. 6 sigilla, all narrow oval, marginal and all 5.3% sternum width long. 4 pairs of lyriform organs.

Legs (Table 3): 4321. Covered with long brown bristles. Some pile hairs on posterior tarsi. Tibiae unmodified. Metatarsus II with ventral cluster of close bristles. Preening combs of 3-4 "teeth" on pro-ventral metatarsus I and one of 2 "teeth" on pro-ventral metatarsus III.

Palp (Fig. 14): Bulb pyriform with gradually tapering embolus.

Spines: Femora with long bristles. *Leg I*: patella, 0; tibia, p2, v4; metatarsus, p2, v6; tarsus, 0. *Leg II*: patella, p2; tibia, p3, v5; metatarsus, p3, v4; tarsus, 0. *Leg III*: patella, p2, r3; tibia, p3, d1, r3, v4; metatarsus, p4, r4, v5; tarsus, 0. *Leg IV*: patella, p3, r1; tibia, p3, r4, v6; metatarsus, p3, r3, v5; tarsus, v1. **Palp**: tibia, p2; tarsus, 0.

Claws: STC each with 10 teeth; ITC without teeth.

Trichobothria: Two rows, each of 7, on all tibiae. One row of 9 on metatarsi and tarsi.

Abdomen: With long brown bristles.

Spinnerets: PMS 1.17 long, 0.18 in diameter; bases 1.13 apart. Basal, middle, distal and total segments of PLS 1.87, 1.50, 2.00, 5.37 long.

Paratype Female

Differs in following respects from male. Carapace 3.80 long, 3.26 wide. Abdomen 4.13 long, 3.20 wide.

Carapace: Fovea straight.

Eyes: Front row eye centres slightly procurved.

Legs (Table 3): 4312. Preening combs of 2-6 "teeth" on all metatarsi.

Spines: Femora with bristles. *Leg I*: patella, 0; tibia, p2, v5; metatarsus, p3, v5; tarsus, 0. *Leg II*: patella, p3; tibia, p3, v5; metatarsus, p3, v5; tarsus, 0. *Leg III*: patella, p4, r2; tibia, p1, r1, v5; metatarsus,

p3, r2, v4; tarsus, v2. *Leg IV*: patella, p1, r2; tibia, p3, r2, v5; metatarsus, p3, r4, v5; tarsus, v2. **Palp**: tibia, p1, v4; tarsus, v4.

Claws: Palpal claw with 8 teeth.

Spinnerets (Fig. 15): PMS 1.00 long, 0.26 in diameter; bases 1.10 apart. Length of basal, middle, distal and total segments of PLS 1.45, 1.71, 1.80, 4.96.

Spermathecae: With ill-defined short apical bifurcation.

Distribution: *S. annulata* is known from New Caledonia and nearby Îles Loyalty.

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