

The spider genus *Creugas* Thorell, 1878 in the Afrotropical Region (Araneae: Corinnidae)

Пауки рода *Creugas* Thorell, 1878 (Araneae: Corinnidae) Афротропики

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КЛЮЧЕВЫЕ СЛОВА: Африка, Aranei, пантропический, острова Индийского Океана.

ABSTRACT. The spider genus *Creugas* is represented by a single species in the Afrotropical Region, *C. gulosus* Thorell, 1878. The species is redescribed, figures of the habitus and copulatory organs are provided, and its distribution in the Afrotropical Region is updated.

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РЕЗЮМЕ. Пауки рода *Creugas* представлены в Афротропике единственным видом *C. gulosus* Thorell, 1878. Этот вид переописан, приведены иллюстрации внешнего вида, копулятивных органов и карта распространения в регионе.

Introduction

The dark sac spider genus *Creugas* Thorell, 1878 comprises nearly twenty species, occurring primarily in South America [WSC, 2019]. A single pantropical species, the type species *C. gulosus* Thorell, 1878, occurs in tropical South and North America, South-East Asia, Australia and the Pacific islands of Hawaii, Marquesas and Samoa [Bonaldo, 2000; Deeleman-Reinhold, 2001; Raven, 2015]. It is also the only species recorded from continental Africa, Reunion and the Seychelles to date [Simon, 1886, 1910; Lessert, 1946; Bonaldo, 2000; Saaristo, 2002, 2010; Jacquot *et al.*, 2016].

The wide global distribution of *C. gulosus* has inevitably resulted in the description of this species under 18 different names (for complete bibliography and synonyms see Bonaldo [2000] and WSC [2019]), including one species described from Africa, *Creugas senegalensis* Simon, 1886. In this paper, a redescription

of *C. gulosus* is given, with comments on its distribution in the Afrotropical Region.

Material and methods

The spiders included in this study were examined and photographed using a Nikon SMZ800 stereomicroscope with a coupled Nikon D5-L3 camera system. A series of digital photographs were taken of habitus and genitalic structures and stacked using CombineZM imaging software [<http://www.hadleyweb.pwp.blueyonder.co.uk>] to increase the depth of field. All measurements are given in millimetres, and leg spination follows the format of Bosselaers & Jocqué [2000], including the following abbreviations: do — dorsal; pl — prolateral; plv — prolateral ventral; rl — retrolateral; rlv — retrolateral ventral; vt — ventral terminal.

The distribution maps were created using the online software SimpleMappr [Shorthouse, 2010]. Where locality co-ordinates were not available on depository labels, they were searched for using Google Earth [<https://www.google.com/earth/>], and are presented in square brackets.

The following abbreviations are used in the descriptions: AER — anterior eye row; AL — abdomen length; ALE — anterior lateral eye; AME — anterior median eye; AW — abdomen width; CL — carapace length; CW — carapace width; FL — fovea length; MOQ — median ocular quadrangle, AW — anterior width, L — length, PW — posterior width; PER — posterior eye row; PERW — eye row width; PLE — posterior lateral eye; PME — posterior median eye; SL — sternum length; SW — sternum width; TL — total length;

The material examined in this study is deposited in the following collections (curators in parenthesis): MNHN — Muséum National d’Histoire Naturelle, Paris, France (Christine Rollard); MRAC — Royal Museum for Central Africa, Tervuren, Belgium (Rudy Jocqué); MZT — Zoological Museum, University of Turku, Turku, Finland (Seppo Koponen); NCA — National Collection of Arachnida, ARC — Plant Health and Protection, Pretoria, South Africa (Ansie Dippenaar-Schoeman, Petro Marais); USNM — National Museum of Natural History, Smithsonian Institute, Washington D.C., U.S.A. (Jonathan Coddington).

Taxonomy

Corinnidae Karsch, 1880

Creugas Thorell, 1878

Type species: *Creugas gulosus* Thorell, 1878, from Amboin, Indonesia.

Creugas gulosus Thorell, 1878

Figs 1A–D, 2A–E.

Creugas gulosus Thorell, 1878: 175 (juv.); Bonaldo, 2000: 98, figs 5–6, 18, 28, 44, 106–107, 261–270 (♂♀); Saaristo, 2002: 6, figs 11–15 (♂♀); Saaristo, 2010: 58, figs 6.1–5 (♂♀); Jacquot *et al.*, 2016: 422, fig. 1a–f (♂♀).

Creugas senegalensis Simon, 1886: 376 (♀).

Corinna senegalensis Simon, 1898: 196; Simon, 1910: 384, fig. 16 (♂); Lessert, 1946: 213, fig. 13 (♂).

Only combinations and references relevant to Afrotropical Region included. For full bibliography see WSC [2019].

TYPE MATERIAL. Holotype ♀ of *Creugas senegalensis*: SENEGAL: Dakar [14°45'N, 17°25'W], leg. M.E. Blondel, MNHN 4880 — examined.

MATERIAL EXAMINED. BENIN: No specific locality, 2003, leg. S. Tchibozo, 1 ♂ (MRAC 215025); Université d'Abomey-Calavi, 06°27'N, 02°21'E, 28.XII.2002, leg. S. Tchibozo (on leaves of mango and other fruit trees), 1 ♂ (MRAC 212767). CAMEROON: Galim [07°05'N, 12°28'E], 13–20.VIII.1971, leg. F. Puy-laert, 1 ♂ (MRAC 141387). CAPE VERDE ISLANDS: Ile Santo Antao, Ponta do Sol, 17°12'N, 25°06'W, 15.XI.1998, leg. W. Tavernier (in bathroom), 1 ♂ (MRAC 208425). DEMOCRATIC REPUBLIC OF THE CONGO: Bafwasende, 01°00'N, 27°09'E, leg. R. de Lessert, 1 ♂ (MRAC 212782); Tshopo, Avabuki, 01°19'N, 27°33'E, leg. Delhaize, 1 ♂ (MRAC 12425). LIBERIA: Monrovia, Montserrado Co., 06°19'N, 10°48'W, 1894, leg. O.F. Cook Collection, 1 ♂ (USNM). NIGERIA: Benue-Plateau, Jos, 09°55'N, 08°54'E, X–XII.1965, leg. E. Bot Gwong, 1 ♂ (MRAC 130619). SEYCHELLES: Aride Island [04°12'S, 55°39'E], VII–IX.2000, leg. J. Bowler (litter sampling), 1 ♂ (MZT AA 2.120); Cousine Island [04°21'S, 55°38'E], X.1996, leg. S. le Maitre, 2 ♂♂ (MZT AA0.406); Same locality, 10.XI.1996, leg. O. Bourquin (in house), 1 ♂ (MZT AA 0.387); Same locality, 4.X.2008, leg. R. Gaigher (pitfalls under *Pisonia grandis*), 1 ♂ (NCA 2010/254); Same locality, E-end, 24.I.1999, leg. M. Saaristo (among rotten coconut leaves), 10 imm. 1 ♂ 2 ♀♀ (MZT AA 0.442); Same locality, W-end “pedestal”, 25.I.1999, leg. M. Saaristo (coconut leaves etc.), 3 imm. 1 ♀ (MZT AA 0.443); Same locality, W-end after *Pisonia* forest, 25.I.1999, leg. M. Saaristo, 1sa♂ (MZT AA 0.444); Same locality, close to office, 25.I.1999, leg. M. Saaristo (shaking coconut leaves), 1sa♀ (MZT AA 0.445); Mahé Island, Sans Soucis [04°39'S, 55°26'E], II.2002, leg. P. Matyot, 1 ♂ 1 ♀ (MZT AA 2.215); Silhouette Island, La Passe [04°28'S, 55°14'E], 10.VII.1999, leg. J. Gerlach (in house), 1 ♂ (MZT AA 1.303); Vaches Island [04°41'S, 55°26'E], 15.VIII.1972, leg. P.L.G. Benoit & J.J. van Mol, 1 ♀ (MRAC 143426). SIERRA LEONE: Freetown [08°28'N, 13°13'W], 1 ♂ 1 ♀ (MNHN 10713).

DIAGNOSIS. *Creugas gulosus* can be recognized from other Afrotropical Corinninae by the somatic characters and shape of copulatory organs. Both sexes have a relative low carapace in lateral profile, while the cephalic regions of *Mandaneta* Strand, 1932 and *Procopius* Thorell, 1899 are greatly raised (see Haddad & Bosselaers, 2010: figs 16, 20). It can be distinguished from *Pseudocorinna* Simon, 1910 and *Crinopseudoa* Jocqué & Bosselaers, 2011 by the absence of carapace warts and the broader cephalic region, which is markedly narrowed in the latter genera [Jocqué, Bosselaers, 2011: figs 3F, 43E]. Females have a distinctly raised transverse median plate in the posterior half of the

epigyne, with openings anteriorly and posteriorly (Fig. 1E), forming a continuous channel into which the male palpal conductor presumably fits during copulation. Males can be distinguished from other genera, particularly *Pronophaea* Simon, 1897 and *Austrophaea* Lawrence, 1938, by the conductor being clearly separated from the embolus, larger and translucent (*cf.* Fig. 1G with figs 30 and 32 in Haddad & Bosselaers, 2010). Males also lack the distinctive modified distal cymbial setae found in the latter two genera.

DESCRIPTION. Female (Sans Soucis, MZT AA 2.215). Measurements: CL 3.25, CW 2.60, AL 4.18, AW 2.63, TL 7.20, FL 0.27, SL 1.70, SW 1.56, AME–AME 0.09, AME–ALE 0.06, ALE–ALE 0.51, PME–PME 0.16, PME–PLE 0.17, PLE–PLE 0.75, PERW 0.97, MOQAW 0.43, MOQPW 0.39, MOQL 0.40.

Length of leg segments: I 10.41 (2.70, 1.22, 2.45, 2.25, 1.79); II 9.45 (2.47, 1.15, 2.10, 2.08, 1.65); III 9.12 (2.34, 1.10, 1.85, 2.35, 1.48); IV 11.75 (3.10, 1.25, 2.65, 3.15, 1.60).

Habitus of female as in Fig. 1A, of holotype of *C. senegalensis* in Fig. 1B. Carapace surface finely granulate, covered in white feathery setae, with scattered long erect black setae along midline, denser behind fovea, longest in eye region; carapace deep orange-brown, with faint black mottling around striae; eye region darker. AER strongly procurved, medians larger than laterals; AME separated by distance equal to ½ their diameter; AME separated from ALE by ⅓ AME diameter; clypeus height equal to AME diameter; PER procurved, laterals larger than medians, smaller than anterior eyes; PME separated by distance equal to 1⅓ their diameter; PME separated from PLE by distance equal to ½ PME diameter; CW:PERW = 2.68:1. Chelicerae deep red-brown, with scattered long black setae on anterior surface of paturon; three teeth on promargin, median tooth largest, distal and proximal teeth smaller, subequal; retromargin with four evenly spaced teeth, decreasing slightly in size distally; chilum split; endites and labium orange-brown, with scattered straight setae, darker proximally; distal ends of endites cream at dense maxillar hair tuft; serrula distinct; labium slightly broader than long; sternum orange, darker around margins; precoxal triangles present; intercoxal sclerites present between coxae I and II, and II and III, absent between III and IV; pleural bars isolated. Legs orange-brown, with faint black mottling on femora, metatarsi and tarsi slightly darker; femora covered in black feathery setae, patellae to metatarsi with white feathery setae; retrocoxal window present on coxae I. Leg spination: femora: I pl 1 do 2, II pl 1–2 do 2, III pl 2 do 3 rl 2, IV pl 2 do 2–3 rl 1; patellae: without do terminal seta; tibiae: I plv 5–6 rlv 5 vt 2, II plv 5 rlv 4 vt 2, III pl 2 do 1 rl 2 plv 2 rlv 2 vt 2, IV pl 2 rl 2 plv 2 rlv 2 vt 2; metatarsi: I plv 2 rlv 2, II plv 2 rlv 2, III pl 3 rl 3 plv 2 rlv 2 vt 1, IV pl 3 rl 3 plv 2 rlv 2 vt 1. Palpal spination: femora: pl 1 do 2; patellae: spineless; tibiae: pl 2 plv 1; tarsi: pl 1 plv 1 vt 2. Abdomen mottled grey dorsally, without markings; dorsal scutum absent; one pair of sigilla present, at abdomen ⅓ length; dorsum covered in light brown feathery setae, with scattered short straight brown setae; venter creamy-grey, without ventral or inframamillary sclerites; venter with light brown and yellowish feathery setae, with scattered brown straight setae.

Epigyne with transverse median ridge, open anteriorly and posteriorly, forming continuous open channel; copulatory ducts positioned posterolaterally (Fig. 1E); spermathecae teardrop-shaped, located laterally, with additional round lobe on mesal margin (Fig. 1F).

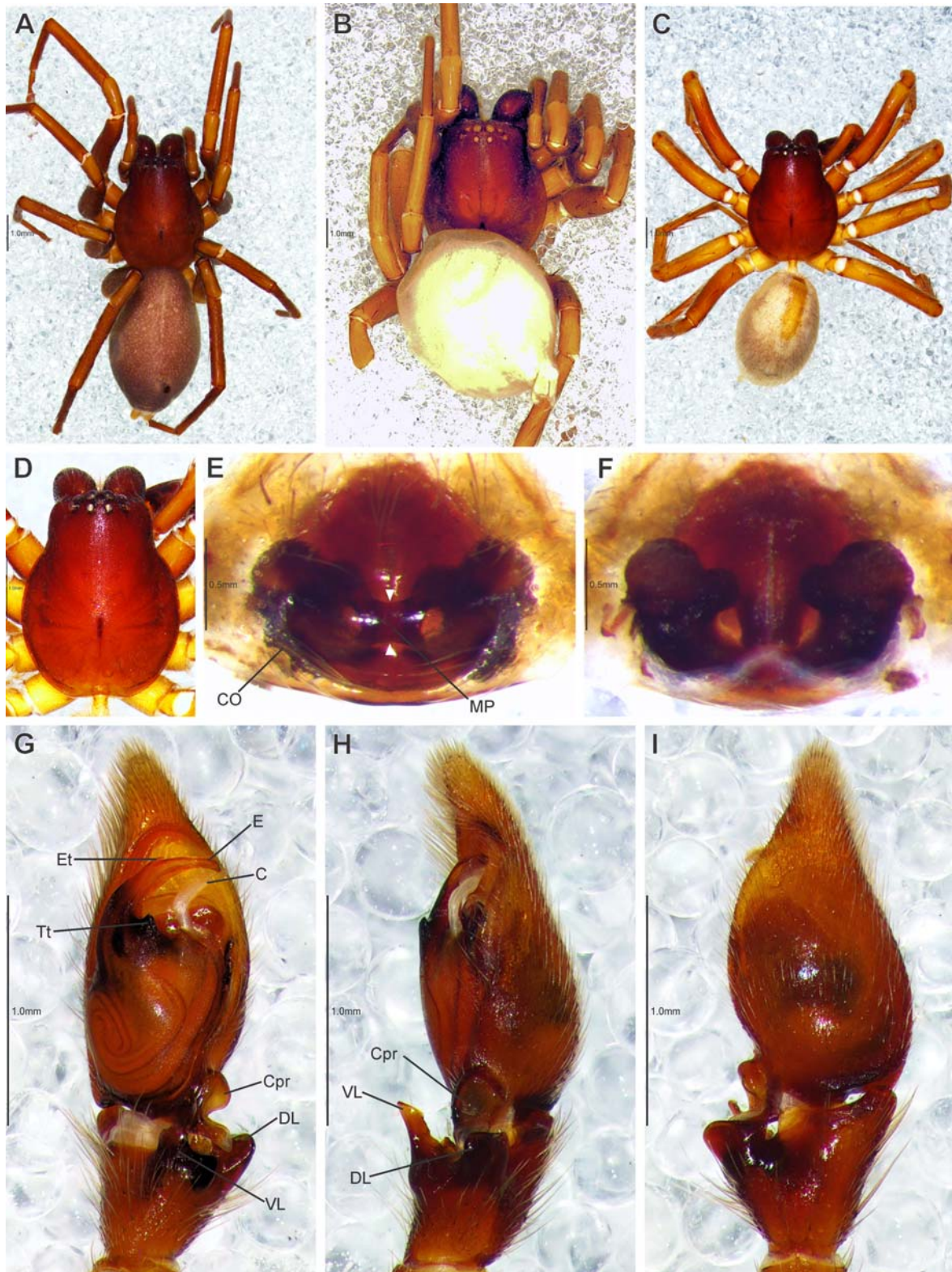


Fig. 1. Habitus and copulatory organs of *Creugas gulosus*. A — female from Sans Soucis, dorsal habitus; B — female holotype of *C. senegalensis* from Dakar, dorsal habitus; C — male from Cousine, dorsal habitus; D — same, carapace in dorsal view; E–F — epigyne in ventral (E) and dorsal (F) views, arrowheads indicating anterior and posterior openings of transverse median ridge; G–I — male palp in ventral (G), retrolateral (H) and dorsal (I) views. Abbreviations: C — conductor; CO — copulatory opening; Cpr — basal prolateral cymbial process; DL — dorsal lobe of retrolateral tibial apophysis; E — embolus; Et — embolic tooth; MP — median plate; Tt — tegular tooth; VL — ventral lobe of retrolateral tibial apophysis.

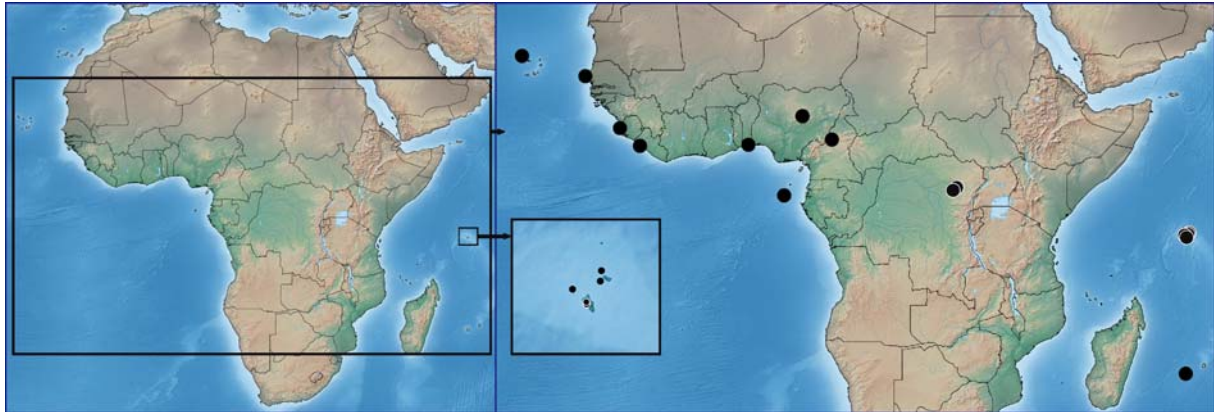


Fig. 2. Map of Africa, enlargements showing the distribution of *Creugas gulosus* in the Afrotropical Region and the Seychelles archipelago.

Рис. 2. Карта Африки, показывающая распространения *Creugas gulosus* в Афротропике и на Сейшелах.

Male (Cousine, NCA 2010/254). Measurements: CL 3.22, CW 2.50, AL 3.45, AW 2.25, TL 6.70, FL 0.34, SL 1.61, SW 1.50, AME-AME 0.06, AME-ALE 0.04, ALE-ALE 0.51, PME-PME 0.17, PME-PLE 0.19, PLE-PLE 0.76, PERW 0.97, MOQAW 0.44, MOQPW 0.41, MOQL 0.41.

Length of leg segments: I 10.01 (2.66, 1.15, 2.40, 2.10, 1.70); II 9.04 (2.45, 1.08, 1.96, 2.00, 1.55); III 8.14 (2.18, 0.95, 1.65, 2.10, 1.26); IV 10.78 (2.86, 1.10, 2.39, 2.97, 1.46).

Habitus of male as in Figs 1C–D. Colouration slightly brighter than female. Morphology similar to female except for the following: AME separated by distance equal to $\frac{1}{3}$ their diameter; AME separated from ALE by $\frac{1}{4}$ AME diameter; clypeus height equal to $\frac{1}{4}$ AME diameter; PME separated by distance equal to $\frac{1}{4}$ their diameter; PME separated from PLE by distance equal to $\frac{1}{3}$ PME diameter; CW:PERW = 2.58:1. Leg spination: femora: I pl 1 do 2, II pl 1 do 2, III pl 1 do 3 rl 2, IV pl 1 do 3 rl 1; patellae: without do terminal seta; tibiae: I plv 6 rlv 5 vt 2, II plv 4–5 rlv 4 vt 2, III pl 2 do 1 rl 2 plv 2 rlv 2 vt 2, IV pl 2 do 1 rl 2 plv 2 rlv 2 vt 2; metatarsi: I plv 2 rlv 2, II plv 2 rlv 2, III pl 3 rl 3 plv 2 rlv 2 vt 1, IV pl 3 rl 3 plv 2 rlv 2 vt 1. Palpal spination: femora: pl 1 do 2; patellae: spineless; tibiae: pl 2 plv 1; tarsi: pl 1 plv 1 vt 2. Abdomen with narrow orange-yellow dorsal scutum extending to midpoint of dorsum, venter without sclerites.

Palp elongate-oval, tip of cymbium pointed; cymbium with large proximal retrolateral apophysis; palpal tibia with lobate prolateral apophysis, retrolateral apophysis comprising digitiform ventral lobe and broad quadrangular dorsal lobe; tegulum oval, with distal tooth positioned retrolateral of embolus base; embolus originating distally on prolateral side of tegulum, transverse, curving retrolaterally, with small tooth on distal margin; conductor long, curved, translucent, originating medially at distal end of tegulum (Figs 1G–I).

DISTRIBUTION. Widespread in tropical South America [Bonaldo, 2000], presumably introduced into North America, Australia, South-East Asia, various Pacific islands, and Africa [WSC, 2019]. In Africa, previously recorded from

Senegal [Simon, 1886], Sao Tomé [Simon, 1910], D.R. Congo [Lessert, 1946], Nigeria, Cameroon and Sierra Leone [Bonaldo, 2000], Seychelles [Bonaldo, 2000; Saaristo, 2002, 2010] and Reunion [Jacquot *et al.*, 2016]. Widely distributed but rare throughout tropical continental Africa; also occurring on the Indian Ocean islands of Seychelles and Reunion (Fig. 2).

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References

- Bonaldo A.B. 2000. Taxonomia da subfamília Corinninae (Araneae, Corinnidae) nas regiões Neotropical e Neártica // Iheringia, Série Zoologia. Vol.89. P.3–148.
- Bosselaers J., Jocqué R. 2000. Studies in Corinnidae: transfer of four genera and description of the female of *Lessertina mutica* Lawrence 1942 // Tropical Zoology. Vol.13. P.305–325.
- Deeleman-Reinhold C.L. 2001. Forest spiders of South East Asia: with a revision of the sac and ground spiders (Araneae: Clubionidae, Corinnidae, Liocranidae, Gnaphosidae, Prodidomidae and Trochanterriidae [sic]). Leiden: Brill. 591 p.
- Haddad C.R., Bosselaers J. 2010. A revision of the genus *Medmasa* Simon, 1887 (Araneae: Corinnidae) in the Afrotropical Region // Zootaxa. Vol.2361. P.1–12.
- Jacquot M., Derepas B., Deguine J.-P. 2016. Seven newly recorded species and families of spiders from Reunion Island (Malagasy region) (Araneae, Araneomorphae) // Bulletin de la Société Entomologique de France. Vol.121. P.421–430.
- Jocqué R., Bosselaers J. 2011. Revision of *Pseudocorinna* Simon and a new related genus (Araneae: Corinnidae): two more examples of spider templates with a large range of complexity

Рис. 1. Габитус и копулятивные органы *Creugas gulosus*. А — самка из Sans Soucis, сверху; В — голотип самка из Дакара, сверху; С — самец из о-ва Cousine, сверху; D — карапакс самца, сверху; E–F — эпигина, вентрально и дорзально (стрелками показаны передний и задний край медиального гребня); G–I — пальпа самца, снизу, ретролатерально, сверху. Сокращения: С — кондуктор; CO — копулятивное отверстие; CPr — вырост цимбиума; DL — верхняя доля ретролатерального отростка голени; E — эмболус; Et — зубчик эмболуса; MP — медиальная пластинка; Tt — тегулярный зубчик; VL — нижняя доля ретролатерального отростка голени.

- in the genitalia // *Zoological Journal of the Linnean Society*. Vol.162. P.271–350.
- Lessert R. de 1946. Araignées du Congo Belge // *Revue Suisse de Zoologie*. T.58. P.204–225.
- Raven R.J. 2015. A revision of ant-mimicking spiders of the family Corinnidae (Araneae) in the Western Pacific // *Zootaxa*. Vol. 3958. P.1–258.
- Saaristo M.I. 2002. New species and interesting new records of spiders from Seychelles (Arachnida, Araneae [sic]) // *Phelsuma*. Vol.10. Suppl.A. P.1–31.
- Saaristo M.I. 2010. Araneae // Gerlach J., Marusik Y.M. (eds.). *Arachnida and Myriapoda of the Seychelles islands*. Manchester: Siri Scientific Press. P.8–306.
- Shorthouse D.P. 2010. SimpleMappr, an online tool to produce publication-quality point maps, online at <http://www.simplemappr.net>, accessed 11.9.2019.
- Simon E. 1886. *Etudes arachnologiques*. 18e Mémoire. XXVI. Matériaux pour servir à la faune des Arachnides du Sénégal. (Suivi d'une appendice intitulé: Descriptions de plusieurs espèces africaines nouvelles) // *Annales de la Société Entomologique de France*. Ser.6. T.5. P.345–396.
- Simon E. 1898. *Histoire naturelle des araignées*. Paris: Roret. T.2. P.193–380.
- Simon E. 1910. Arachnides recueillis par L. Fea sur la côte occidentale d'Afrique. 2e partie // *Annali del Museo Civico di Storia Naturale di Genova*. Vol.44. P.335–449.
- Thorell T. 1878. Studi sui ragni Malesi e Papuani. II. Ragni di Amboina raccolti Prof. O. Beccari // *Annali del Museo Civico di Storia Naturale di Genova*. Vol.13. P.1–317.
- WSC. 2019. *World Spider Catalog*. Version 20.5. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, accessed on 11.9.2019.

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