

On a new species of the genus *Simlops* (Araneae, Oonopidae) from Guyana, with notes on the *bodanus* group of species

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ABSTRACT. A new species of *Simlops* Bonaldo, Ott & Ruiz, 2014, *S. kartabo* sp. nov., from Guyana is described. The new species belongs to the putatively basal *bodanus* species group, sharing with other species of the group a relatively simple embolar distal third. The presence of a filiform accessory process on the conductor, previously evidenced only for *S. guatopo* Brescovit, 2014 is also identified here for *S. bodanus* (Chickering, 1968), *S. guyanensis* Santos, 2014 and *S. kartabo* sp. nov. and may support the monophyly of the *bodanus* group.

KEYWORDS. Arachnida, Dysderoidea, Neotropical Region, Taxonomy.

RESUMO. Uma nova espécie do gênero *Simlops* da Guiana (Araneae, Oonopidae) e notas sobre o grupo de espécies *bodanus*. Uma nova espécie de *Simlops* Bonaldo, Ott & Ruiz, 2014, *S. kartabo* sp. nov., da Guiana é descrita. A nova espécie pertence ao grupo de espécies *bodanus*, um grupo putativamente basal em *Simlops*, pois apresenta o terço distal do êmbolo relativamente simples. A presença de um processo acessório filiforme no condutor, previamente evidenciado apenas para *S. guatopo* Brescovit, 2014 também é identificado aqui para *S. bodanus* (Chickering, 1968), *S. guyanensis* Santos, 2014 e *S. kartabo* sp. nov. e pode apoiar a monofilia do grupo *bodanus*.

PALAVRAS-CHAVE. Arachnida, Dysderoidea, Região Neotropical, Taxonomia.

BONALDO *et al.* (2014) recently proposed *Simlops* Bonaldo, Ott & Ruiz for 15 oonopid species of which only one was previously described. *Simlops* shares with other Neotropical genera grouped in the *Scaphiella* complex (*sensu* PLATNICK & DUPÉRRÉ 2009, 2010a,b, 2011) characteristic sexual dimorphism, in which the males have fully sclerotized abdomens, with a large dorsal scutum, while the females are less sclerotized, generally without the dorsal abdominal scutum. The monophyly of *Simlops* was based on the tripartite distal end of the male endites (Fig. 8; BONALDO *et al.*, 2014, figs 275-289), a condition that seems to be exclusive within the *Scaphiella* complex. BONALDO *et al.* (2014) recognized five informal groups of species in *Simlops*, based mainly in the shape of the embolus and conductor. One of these groups, the *bodanus* group, is composed by three putatively basal species that share a relatively simple embolar distal third, without the modifications present in other groups of species. Here, we describe a new species of the genus that represents the fourth known member of the *bodanus* group, since it also has a simple embolar distal third. The distribution of *Simlops* species is typically Amazonian, with most species occurring in the Amazon Basin, from Colombia to the State of Pará, northern Brazil. However, the *bodanus* group has a more peripheral distribution, being known from southern Caribbean and Guyanas. The new species is based on a

single specimen collect 93 years ago in the small village of Kartabo, Guyana, the same locality in which the types of *S. guyanensis* Santos, 2014 were collected.

MATERIAL AND METHODS

The material examined belongs to the Arachnida collection of the American Museum of Natural History, New York (AMNH, curator L. Prendini). Our description methods were those described by BONALDO *et al.* (2014) and included an extensive use of the descriptive database made available by the Planetary Biodiversity Inventory (PBI-Oonopidae). This database allows entering descriptive data in a highly structured format, aiming the direct use of that information in formal descriptions. To make the description of *S. kartabo* sp. nov. comparable to those of other species presented by BONALDO *et al.* (2014), a genus description was generated with the available information of all 16 species in the database. Then, species descriptions devoid of those characters common to all species were generated for each of the 16 species. In order to make the species descriptions more concise, the formal generic description of *Simlops* by BONALDO *et al.* (2014) included a few characters that were not observed in all species (noted as exceptions). Thus, the automatically generated species

description obtained for *S. kartabo* sp. nov. was further shortened to match those of previously described species. Google Earth was used to estimate locality coordinates. The images were flipped for consistency when necessary. High-resolution versions of the images and distribution maps for all species of *Simlops* will be available at the PBI-Oonopidae page (<http://research.amnh.org/oonopidae>).

Simlops kartabo sp. nov.

<http://zoobank.org/712F73C4-3181-4BEA-8883-8650ADDC5479>

(Figs 1–15)

Type material. Holotype ♂ from Kartabo, Cuyuni-Mazaruni region, Guyana (6°0'N, 58°0'W), 1924, sifting, unknown collector (AMNH, PBI_OON 1024).

Etymology. The specific name is a noun in apposition taken from the type locality.

Diagnosis. Males of *Simlops kartabo* sp. nov. are similar to those of *S. bodanus* (Chickering, 1968) in the short, wide-based needle-like process on palpal conductor (see Bonaldo *et al.*, 2014: fig. 315), but are readily recognized by this process being basally inserted and by the shorter embolus, strongly bent proximally, with truncate apex (Figs 12–15).

Description. Male (PBI_OON 1024, figs 1–15). Total length 1.80 mm. Carapace, sternum and mouthparts pale orange, without color pattern; abdomen ovoid, dorsum soft portions white, abdominal scutum yellow. Sternal microsculpture only in furrows. Endites with prolateral process stout, gently curved retrolaterally, with apex truncate; retrolateral projection triangular, with wide base; median process narrow, not protruded. Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus sinuous, with a strong basal bend and truncate tip; conductor longer than embolus, semitranslucent, originating from the bulbus, with a basal unsclerotized hook and long, bifurcated sclerotized strip.

Female: Unknown.

Other material examined. None.

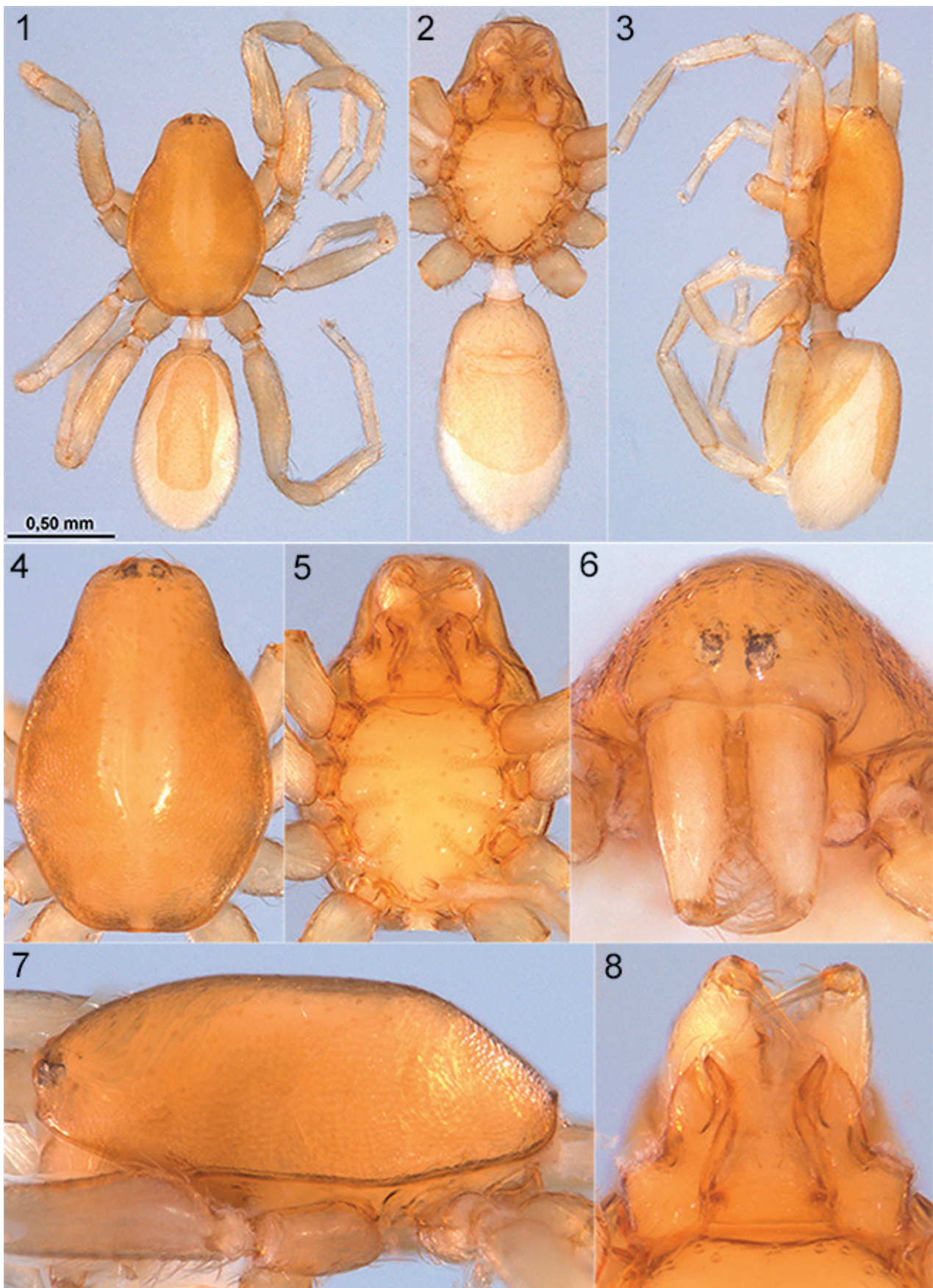
Distribution. Known only from the type locality.

DISCUSSION

Based on the relatively unmodified embolus, BONALDO *et al.* (2014) suggested that species of the *bodanus* group could be regarded as basal taxa in the genus. Other features that could support that claim, such as the presence of a well-developed posterior receptaculum in the female genitalia (also present in *Pescennina* Simon, 1903) and even the presence of a small (*S. bodanus*) or rudimental (*S. guyanensis*) female dorsal scutum, cannot be addressed here since no female forms are known for either *S. guatopo* Brescovit, 2014 and *S. kartabo* sp. nov. However, the discovery of *S. kartabo* sp. nov.

permitted the reinterpretation of some details of the conductor morphology, leading to the recognition of further informative characters. The conductor in *Simlops* species is variable in shape, position and degree of sclerotization. Some species, such as *S. cristinae* Santos, 2014 and *S. cachorro* Ruiz, 2014, have extremely complex conductors, while the three species of the *juruti* group have simple hyaline ones. The *pennai* group is characterized by the presence of a lamellar expansion inserted in the base of a tapering or filiform conductor. Our present findings indicated that the conductor of the species in the *bodanus* group is more complex than previously described. BONALDO *et al.* (2014) indicated that *S. guatopo* present two accessory processes on the conductor, a filiform, needle-like basal process and a stout sub-basal process. It is now clear that the needle-like process is also present in all other species of the group (Figs 15–18, white arrows), being short, wide-based in *S. kartabo* sp. nov. (Fig. 15) and *S. bodanus* (Fig. 16) and long, narrow-based in *S. guyanensis* (Fig. 17) and *S. guatopo* (Fig. 18). The exclusive presence of the needle-like process may be regarded as a putative synapomorphy of the *bodanus* group, and the conductor morphology may also provide some clues regarding the relationships of the species within the group. The short, wide-based needle-like process in *S. kartabo* sp. nov. and *S. bodanus* may represent a synapomorphy supporting a sister group relationship between these two species. On the other hand, the shape and position of the sub-basal process of *S. guatopo* indicated that this structure could be regarded as homologous with the lamellar expansion found in the conductor of the *pennai* group (BONALDO *et al.*, 2014, figs 290–297). If so, the sub-basal process in *S. kartabo* sp. nov., *S. bodanus* and *S. guyanensis* would either be lost or represented as a conspicuous, elongated sclerotized strip running in parallel to the distal hyaline portion of the conductor (Figs 15–18, black arrows; BONALDO *et al.*, 2014, fig. 240). We favor the homology of the sub-basal process of *S. guatopo* and the sclerotized strip of the remaining species because both structures are inserted in the same unsclerotized area of the conductor base. Besides, the hypothesis of non-homology of these structures would require an instance of loss of the stout process as well as an instance of gain of the sclerotized strip in *S. kartabo* sp. nov., *S. bodanus* and *S. guyanensis*. If our homology assumptions are correct, the stout condition in *S. guatopo* could be regarded as symplesiomorphic, leading to the recognition of a monophyletic group composed by the three species in the *bodanus* group that share the sclerotized strip condition.

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Figs 1–8. *Simlops kartabo* sp. nov., male: 1, dorsal; 2, ventral; 3, lateral; cephalothorax: 4, dorsal; 5, ventral; 6, frontal; 7, lateral; endites and labium: 8, ventral.



Figs 9–18. Males of *Simlops* species. *Simlops kartabo* sp. nov.: abdomen: 9, dorsal; 10, lateral; 11, ventral; palp: 12, prolateral; 13, dorsal; 14, retrolateral; distal portion of the palp: 15, retro-ventral; *Simlops bodanus* (Chickering, 1968): 16, distal portion of palp, retrolateral. *Simlops guyanensis* Santos, 2014: 17, distal portion of palp, retrolateral. *Simlops guatopo* Brescovit, 2014: 18, distal portion of palp, retroventral. Black arrows: conductor, sub-basal process. White arrows: conductor, needle-like process.

REFERENCES

- BONALDO, A. B.; RUIZ, G. R. S.; BRESCOVIT, A. D.; SANTOS, A. J. & OTT, R. 2014. *Simlops*, a new genus of goblin spiders (Araneae, Oonopidae) from northern South America. **Bulletin of the American Museum of Natural History** **388**:1-60.
- PLATNICK, N. I. & DUPÉRRÉ, N. 2009. The American goblin spiders of the new genus *Escaphiella* (Araneae, Oonopidae). **Bulletin of the American Museum of Natural History** **328**:1-151.
- PLATNICK, N. I. & DUPÉRRÉ, N. 2010a. The goblin spider genus *Scaphiella* (Araneae, Oonopidae). **Bulletin of the American Museum of Natural History** **332**:1-156.
- PLATNICK, N. I. & DUPÉRRÉ, N. 2010b. The Andean goblin spiders of the new genera *Niarchos* and *Scaphios* (Araneae, Oonopidae). **Bulletin of the American Museum of Natural History** **345**:1-120.
- PLATNICK, N. I. & DUPÉRRÉ, N. 2011. The goblin spider genus *Pescennina* (Araneae, Oonopidae). **American Museum Novitates** **3716**:1-64.