



ARTÍCULO:

***Speocera eleonora* sp. n., the first troglomorphic spider from Brazilian caves (Araneae: Ochyroceratidae)**

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ARTÍCULO:

***SPEOCERA ELEONORAE* SP. N., THE FIRST TROGLOMORPHIC SPIDER FROM BRAZILIAN CAVES (ARANEAE: OCHYRO CERATIDAE)**

R. L. C. Baptista

**Abstract**

A new species of *Speocera* Berland, 1914 is described from caves of Mato Grosso do Sul state, Central-West region, Brazil. This is the first troglomorph spider described from Brazil. It has a pale coloration, reduced eyes and longer legs than other species of *Speocera*.

**Key words:** Araneae, Ochyroceratidae, *Speocera*, Taxonomy, cave, troglomorphism, biospeleology, Brazil.

**Taxonomy:** *Speocera eleonora* sp. n.

***Speocera eleonora* sp. n., primera araña troglomórfica de las cuevas brasileñas (Araneae: Ochyroceratidae)**

**Resumen**

Se describe una nueva especie de *Speocera* Berland, 1914 procedente de cuevas ubicadas en el Estado de Mato Grosso do Sul, región centro-oeste de Brasil. Esta especie constituye la primera araña troglomorfa de Brasil, presentando una coloración más pálida, ojos reducidos y apéndices más largos que las restantes especies de *Speocera* conocidas.

**Palabras claves:** Araneae, Ochyroceratidae, *Speocera*, Taxonomía, caverna, troglomorfismos, biospeleología, Brasil.

**Taxonomía:** *Speocera eleonora* sp. n.

**Introduction**

This is the first of a series of papers dealing with spiders found in caves from Brazil. This country has a rich cave fauna, with many troglomorph species still undescribed. The goal of this series is to contribute to the scanty knowledge of the cave spiders from Brazil.

The study of Brazilian cave fauna has been continuously undertaken since the 80's (Pinto da Rocha, 1995; Trajano, 2001). Many troglomorph animals are known from Brazil, belonging to diverse animal groups. Most of them show a high degree of troglomorphism, such as the catfishes *Pimelodella kroni* (Miranda-Ribeiro, 1907) (Pimelodidae) and *Trychomycterus* spp. (Trichomycteridae) (Trajano & Sanchez, 1994), the opilionid *Giupponia chagasi* Kury & Pérez, 2002 (Gonyleptidae), and the amblypygid *Charinus troglobius* Baptista & Giupponi, 2002 (Charinidae). However there are only a few papers focusing on the study of cave animals in particular groups (ex. Mahnert, 2001, Trajano et al., 2000)

Ochyroceratidae are common inhabitants of the forest litter in South and Central America, building small sheet-webs around leaves, sticks and logs. The only described species of Ochyroceratidae from South American caves is *Ochyrocera peruana* Ribera, 1978, a troglomorphic species from caves in northern Peru. Many other Ochyroceratidae species are known from Brazilian caves (Baptista, unpublished data), including four yet undescribed troglomorphic species from Rio de Janeiro, Goiás and Bahia states, Brazil. However, taking in account the rich and varied karstic areas in the continent, many new species will certainly be found in caves. These spiders seem to be common inhabitants of cave conducts, but they are easily overlooked due to their small size and reclusive habits. They build little inverted, sheet webs, with many scaffolding threads. The webs, when present, are found in cracks and cavities in cave walls, usually near the soil in protected places, as blind conducts or recesses of galleries.

The genus *Speocera* Berland, 1914 is composed of 43 nominal species (Platnick, 2003), of which only four are from South America, all described by Brignoli (1978, 1979) from Brazil (three from Amazonas and one from Santa Catarina states). This is the first troglomorphic species of *Speocera* from Brazil and

the third worldwide. The other two troglomorphic species are from southeastern Asia (Deeleman-Reinhold, 1995). The only additional microphthalmous and depigmented species is *S. fagei* (Berland, 1914), from Kenya (collected in litter). This new species is also the first troglomorphic spider described from Brazil and the only terrestrial troglomorphic species described from the calcareous caves of Bonito karstic region, Mato Grosso do Sul state.

All the type specimens are deposited at the arachnological collection of the Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.

The abbreviations used here are: MNRJ - Museu Nacional, Universidade Federal do Rio de Janeiro; AME - Anterior median eyes; AMS - Anterior median spinnerets; PMS - Posterior median spinnerets; PLS - Posterior lateral spinnerets; RTA - Retrolateral tibial apophysis; SEM - Scanning electron microscopy.

### *Speocera eleonora* sp. n.

Figs. 1-7.

**ETIMOLOGY:** The species is named in honor of its collector, Dr. Eleonora Trajano, in recognition to her capital contributions to Brazilian biospeleology.

**TYPES: Holotype: BRAZIL: Bonito:** Gruta Harmonia (MS-034), 22-VII-1992, E. Trajano & P. Gnaspini (Male, MNRJ 3101; bad state of conservation, without abdomen and most legs); **Paratypes: BRAZIL: Bonito:** Gruta Harmonia (MS-034), 22-VII-1992, E. Trajano & P. Gnaspini (Female, MNRJ 3102; bad state of conservation, without legs); **JARDIM:** Gruta do X-Coqueiro (MS-027), 28-VII-1991, E. Trajano (Female, MNRJ 3103; bad state of conservation, without legs).

**DIAGNOSIS:** It can be easily separated from the other species of the genus by the huge, globular palpal tibia, the presence of only the AME, very reduced in size and with no perceptible retina (fig. 1), and for the shape of male and female genitalia (figs. 2-6). The only other depigmented and microphthalmous species of *Speocera* are *S. fagei* (Berland, 1914), from Congo, and two troglobites from Southeastern Asia (Deeleman-Reinhold, 1995), but all of these species have very distinct male genitalia.

**DESCRIPTION: Male:** Carapace 0.6 mm long, 0.7 wide. Abdomen 0.8 long. Only the right first leg present: femur 0.5 mm; patella and tibia 0.7 mm, metatarsus 0.5 mm, tarsus 0.3 mm. Carapace largest in the middle, shortening forward. Only the two AME present, reduced to flattened cupules, without vestige of ocular pigment, separated by less than half their diameter. Chelicera covered by many hairs, with three teeth, the middle one largest, lamella thin, transparent. Endites roundish, elongated. Labium wider than long, without apical notch. Sternum roundish. Abdomen fusiform, tapering backward, smaller than in female. Tracheal

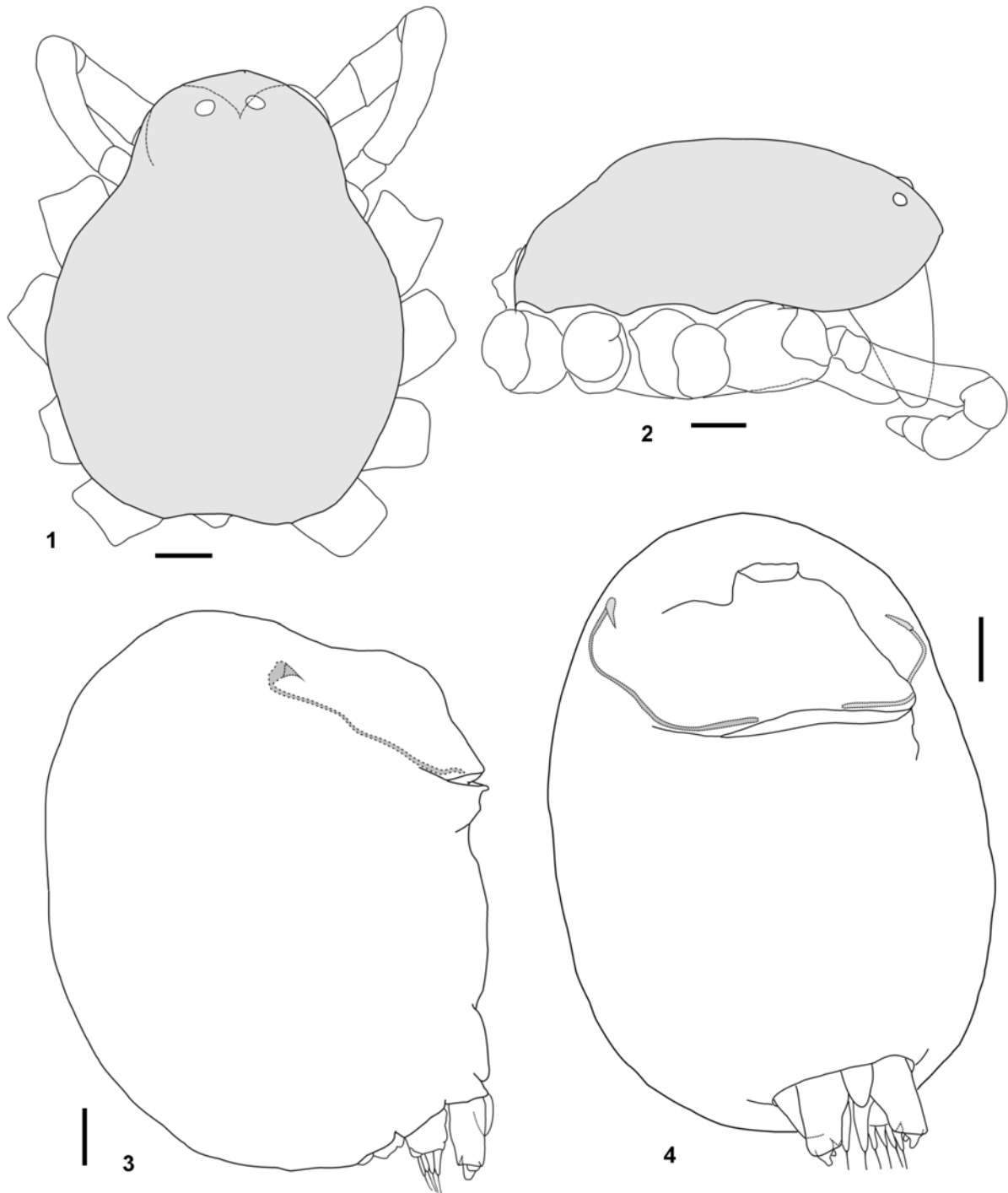
spiracle at the middle of the venter, connected to two divergent tracheal trunks directed forward. AMS large, with only two spigots, with a large collulus between them. PMS triangular, smaller, with only one spigot. PLS truncated at the apex, with four spigots placed in line. **Female:** 0.6 mm long, 0.7 wide. Abdomen 0.9 long. Without legs, differing from the male by the following characters: chelicera with fewer and feebler hairs; PLS with five aligned spigots; longer abdomen.

**GENITALIA: Male** (fig. 5-7): Pedipalp: Femur and patella of male palpus normal. Tibia very incrassate, roundish, with a knob on the anterior, retrolateral margin. Cymbium pointed. Bulbus almost spherical, with structures very small and difficult to visualize. Embolus "L"-shaped, projecting from the surface of bulbus. Three additional sclerites are placed around the embolus. **Female** (fig. 3-4): afferent spermathecae (alula) long, following the epigastric furrow, almost reaching the dorsal surface, curved near the apex, ending in an ventrally directed point. Internal elements seems to be reduced to a tiny median receptacle, difficult to distinguish. A dissection of the internal genitalia was not made, as there are just two known female specimens, both in bad condition.

**COLOR PATTERN:** Body pale yellow, except for the pale brown afferent spermathecae in female. No trace of eye pigments.

**HABITAT:** Specimens were found on small humps of litter at intermediate and aphotic zone. No webs were noticed, but the litter was shifted for collecting. Despite three additional attempts in different years by the original collectors, no additional specimen was found in the caves. These spiders may be rare, but they could be easily overlooked, due to their small size and whitish color.

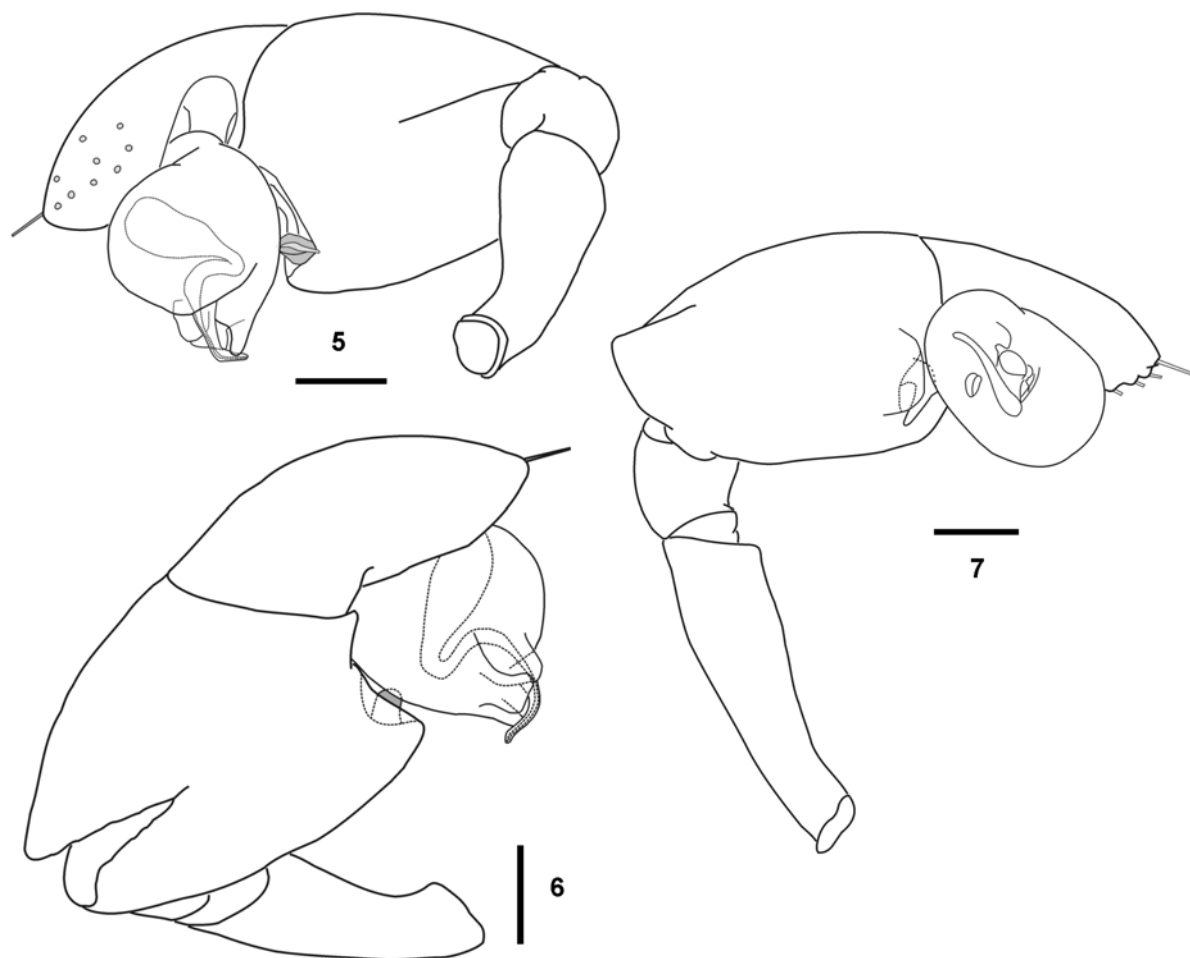
**DISCUSSION:** The generic position of *Speocera eleonora* sp. n. is dubious, as it would deserve a genus of its own. However, the scarcity and bad state of the known specimens, allied to the lack of revisionary studies of *Speocera* and allied genera, prevent the description of a new genus without further studies. This species fits well in the genus *Speocera*, in relation to the general body shape, the presence of an allula and modified sclerites at the palpus, but presents various characters that depart from the typical species. The most remarkable autapomorphic character is the modified tibial apophysis of the pedipalp, placed at the distal region of the ventral side of the tibia, under the bulbus. Only some species of *Theotima* Simon, 1892 have a tibial apophysis, but it is a huge RTA, apparently not homologous to the structure in *S. eleonora*. Another autapomorphy is the huge, inflated, tibia of the pedipalp. Additional specimens in good condition would be helpful to clarify the position of this species, as it would be possible to study the genital structures in detail and to take SEM pictures.



**Fig. 1-4.** *Speocera eleonora* sp. n. **1:** Female paratype. Cephalothorax, dorsal view. **2:** Cephalothorax, lateral view. **3:** Abdomen, lateral view. **4:** Abdomen, ventral view (a little displaced to the right side). Scale = 0.1 mm.

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**Fig. 5-7.** *Speocera eleonora* sp. n. Male holotype. **5:** Pedipalp, retrolateral view (smashed tibia, with ripped corner). **6:** Pedipalp, prolateral view (smashed tibia, with ripped corner). **7:** Pedipalp, ventral view (smashed tibia, with ripped corner). Scale = 0.1 mm.

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