New records of *Scytodes apuecatu* Rheims & Brescovit, 2006, (Araneae: Scytodidae), a rare and endemic species from Cerrado, with description of its egg sac

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Abstract: Here we present new records of the spider *Scytodes apuecatu* Rheims & Brescovit, 2006 with information about its natural history and micro-habitat. Additional taxonomical notes are presented. The egg sac and embryos are described and photographed for the first time.
key words: Cerrado, zoogeography, neotropics, taxonomy, natural history.

Resumen: Presentamos nuevos registros de la araña *Scytodes apuecatu* Rheims & Brescovit, 2006, con información sobre su historia natural y sus micro-hábitats. Se pr-esentan notas taxonómicas adicionales. Es descrito y fotografiado por primera vez el saco de huevos y los embriones.
Palabras clave: Cerrado, zoogeografía, neotrópico, taxonomía, historia natural.

The Cerrado is a large ecoregion distributed throughout Brazil, Bolivia, and Paraguay (Olson *et al.*, 2001). Although very complex, it is defined by the presence of small trees, a very old and deep soil, open vegetation, and two well defined seasons; a rainy (November to April) and dry season (March to October) (Sano *et al.*, 2008). Due to its unique biodiversity, this region has drawn attention of many naturalists since the early XIX century, and even though the Cerrado is studied for more than 200 years (Barbo, 2021), new species and records are still being published, including arachnid taxa (Almeida-Silva & Brescovit, 2024; Bedoya-Roqueme, 2022b; a, 2023; Bertani, 2023; Carvalho *et al.*, 2024; Ferreira *et al.*, 2022; Lovato *et al.*, 2021; Souza *et al.*, 2024; Villarreal *et al.*, 2023).

The family Scytodidae is a cosmopolitan group of spiders known by its unique ability of spitting web on their preys (Motta, 2014; Suter & Stratton, 2005; Zamani *et al.*, 2022). This group is mainly defined by their small body size, six eyes arranged in three dyads, and the presence of glands that produce a sticky silk (Jocqué & Dippenaar-Schoeman, 2007; Motta, 2014). As of April, 2024, 253 valid species belong to this family, distributed in 4 genera: *Dictis* Koch, 1872**,** *Scyloxes* Dunin, 1992 *Scytodes* Latreille, 1804 and *Stedocys* Ono, 1995 (World Spider Catalog, 2024).

Nowadays, the Brazilian scytodid fauna is mainly studied by Brescovit and Rheims, in total, they have described 99 species, 71 of them being recorded in Brazil (Brescovit *et al.*, 2004; Brescovit & Höfer, 1999; Brescovit & Rheims, 2000, 2001; Rheims *et al.*, 2005, 2006, 2007; Rheims & Brescovit, 2000, 2001b; a, 2004, 2006, 2009). Among these, *Scytodes apuecatu*, a rare species that was described using a single female collected in the state of Goiás, Brazil (Rheims & Brescovit, 2006). In this paper, we notify the collection of additional females of *S. apuecatu*, one of which was carrying an egg sac. We also provide taxonomical, and natural history notes.

This study was performed in fragments of native vegetation of Cerrado located in a private property at Carmo do Rio Verde, Goiás, Brazil. We sampled 1 m^2 of leaflitter searching for arachnids. All animals found were stored in vials containing 92% alcohol and then deposited in the Laboratório de Taxonomia, Ecologia, e Interação de Aracnídeos-TEIA, Universidade Federal de Goiás (UFG), Goiânia, GO, Brazil.

Photos and measurements of the females found were taken using LEICA M80 stereomicroscope and imageJ. Measurements are present in millimeters. The epigynum was dissected and cleaned using clove oil (Levi, 1965), and its internal structures were illustrated using Coreldraw. Geographical coordinates were taken using Google Earth. The following abbreviations were used in the text: PME= posterior median eyes; PLE= posterior lateral eyes; ALE= anterior lateral eyes.

Taxonomy

Scytodidae Blackwall, 1864

***Scytodes* Latreille, 1804**

***Scytodes apuecatu* Rheims & Brescovit, 2006**

Scytodes apuecatu Rheims & Brescovit, 2006: 304, f. 33-34 (Df) holotype female from Usina Hidrelétrica de Serra da Mesa (14°01'S, 48°12'W), material deposited in MZSP 15016 (not examined).
Figs. 1-3

MATERIAL EXAMINED: Brazil, Goiás, Carmo do Rio Verde: 1 ♀, Canastra Farm (15º29'30.851"S 49º49'28.168"W), 28-X-2022, Ferreira, M. S. leg. Female with egg sac (TEIA AR-16). 2 ♀, Canastra Farm (15º29'33.893"S 49º49'27.952"W), 29-X-2022, Ferreira M. S. leg. (TEIA AR-17).

MEASUREMENTS (in mm), three females: PME= 0.08-0.1, PLE= 0.09-0.1, ALE= 0.09-0.1, carapace width= 1.47-1.5, carapace length= 1.7-1.85, abdomen width= 1.1-1.6, abdomen length= 1.03-1.7, labium width= 0.2-0.23, labium length= 0.08-0.11, sternum width= 0.68-0.77, sternum length= 0.77-1.01, total length= 2.86-3.4.

IDENTIFICATION. According to Rheims & Brescovit (2006), females of *S. apuecatu* can be identified by the following combination of characters: Large Epigynum with well-sclerotized rugose ridges that extend anteriorly to the epigastric furrow by half their length and are separated from each other by five times their width, internally with small rounded spermathecae on large sperm ducts, adjacent to large hyaline pockets (Figure 1).

TAXONOMY NOTES. Genital anatomy is similar to *Scytodes tapuia* Rheims & Brescovit, 2009 and *Scytodes tyaiapyssanga* Rheims & Brescovit, 2006. But *S. apuecatu* can be differentiated from this species by the position of the rugose ridges in relation to the epigastric furrow, and the spermathecae location and format (Rheims & Brescovit, 2006, 2009).

Another similar species, *Scytodes becki* Rheims & Brescovit, 2001, has its type locality around 10 kilometers away from the type locality of *S. apuecato*, and the holotypes were collected mere months apart in 1995 (Rheims & Brescovit, 2001a, 2006). Both species are very similar in the somatic appearance and share the following combination of characters: similar prosoma and abdomen pigmentation. Femora of all four legs with a pair of longitudinal

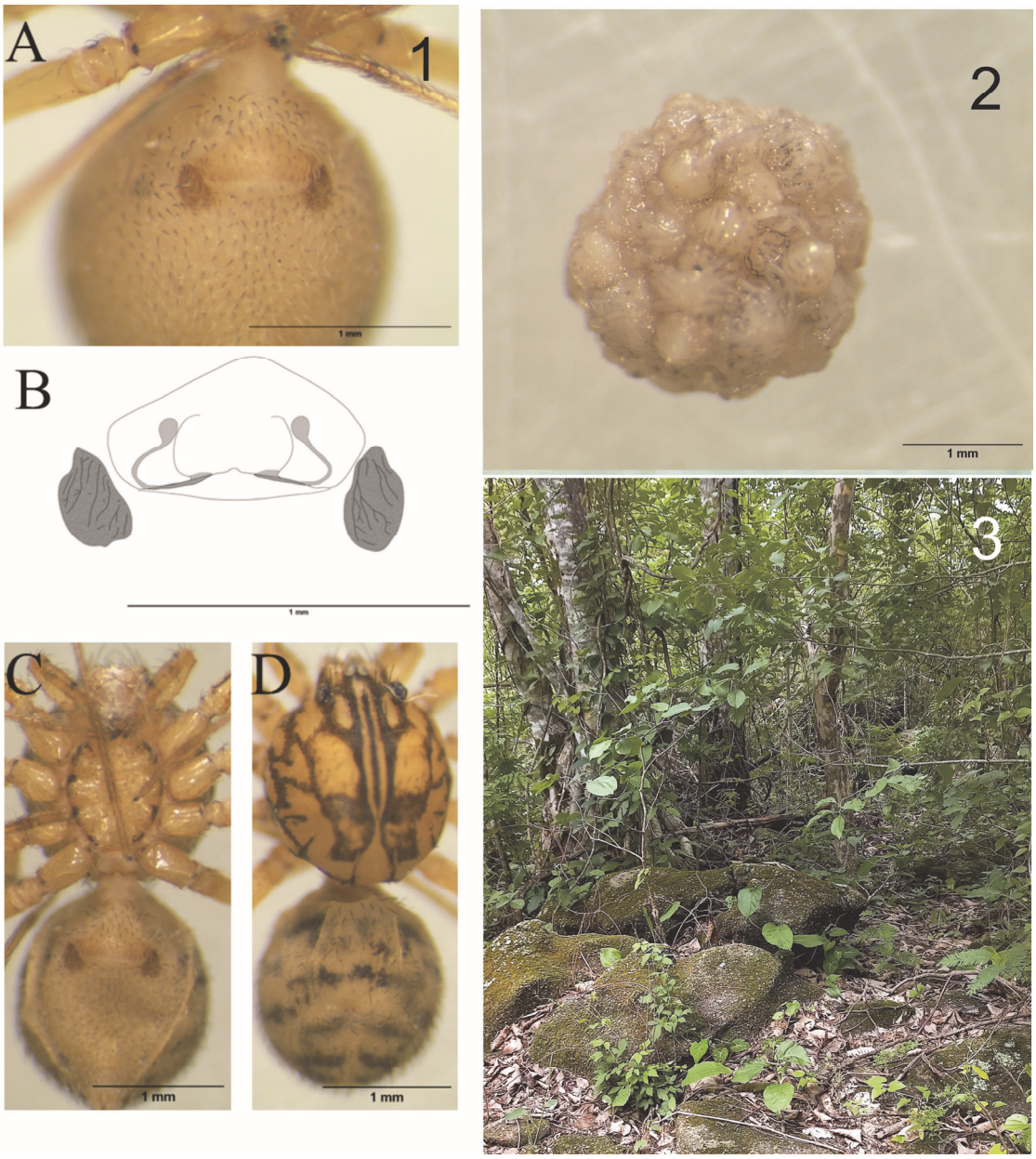

Figure 1:(TEIA AR-17) Female of *Scytodes apuecatu* Rheims & Brescovit, 2006: **A**, Epigynum ventral view, showing the external structures. B, Epigynum dorsal view, showing the internal structures. **C**, ventral view. **D**, dorsal view. **Figure 2:** (TEIA AR-16) Egg sac of *Scytodes apuecatu* Rheims & Brescovit, 2006 showing the embryos. **Figure 3:** Micro-habitat where the spiders were found during October 2022.

brown stripes. Lateral eyes on tubercle. Chelicerae with subapical hyaline keel and inconspicuous stridulatory ridges and sternum. Labium, and endites with the same colors and pigmentation. Apart for the gender of the specimens studied, there are no major difference in the description of both species (Rheims & Brescovit, 2001a, 2006), this suggest the possibility for them to be synonyms. These similarities should be taken in consideration when the genus *Scytodes* suffers a needed taxonomic revision, as is also stated in Zamani et al., (2022).

DESCRIPTION OF THE EGG SAC. Egg sac spherical, with 2.44 mm of diameter, with embryos well visible and developed, held together by a fine layer of silk (Figure 2). All body parts are already present. Although they are mostly white, early signs of pigmentation in the prosoma and opisthosoma are present and are very similar to the adult stage in both format and distribution throughout the body. Egg sac morphology is similar to others *Scytodes* species (Li *et al.*, 1999; Šestáková *et al.*, 2014; Yap *et al.*, 2011).

NATURAL HISTORY. All specimens were sampled on the leaflitter near water bodies. The area in which the specimens where collected is characterized by the presence of large amounts of rocks on the forest floor (Figure 3). Although nearby drier areas where also inspecioned, we did not find additional specimens.

According to Rheims & Brescovit (2006), the holotype was collected in "Usina hidreletrica Serra da Mesa" in 1995, this is a human made, freshwater lake whose project began in the 70s and was fully implemented in 1998 for electricity production (Almeida, 2012). So, it is possible that the type locality was inundated and destroyed during the lake's implementation.

S. apuecatu breeds in the rainy season, since one of the sampled females was carrying an egg sac with its chelicerae. The same happens with most spider species found in the Cerrado (Motta, 2014).

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