

A new species and a new record of *Nesticus* from southeastern Brazil (Araneae: Nesticidae)

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ABSTRACT. A new species of *Nesticus* is described based on specimens collected during a structured inventory of the Reserva Particular do Patrimônio Natural Mata Samuel de Paula, state of Minas Gerais, Brazil. *Nesticus ivone* sp. nov. can be recognized by the paracymbium of the male palpus with three not hooked processes, and by the presence of a central vulval plate in the female epigynum. Additionally, a new record is presented for *Nesticus taim* Ott & Lise, 2002, extending the known distribution range of this species northwards.

KEY WORDS. Minas Gerais, taxonomy, spider, *Nesticus taim*.

The spider family Nesticidae Simon, 1894 includes many species that live in caves, some of which have adaptations for this environment (GERTSCH 1984). However, recent studies have described species of epigean habitats, mostly from litter and foliage (LEHTINEN & SAARISTO 1980, OTT & LISE 2002). Species of Nesticidae are small, ecribellate spiders. They are recognized by a combination of characters, including a rebordered labium, male palp with well developed basal paracymbium and female palpal claw large (BRESCOVIT *et al.* 2002, PAQUIN & HEDIN 2005). Currently the family is composed of nine genera, of which three have been recorded from Brazil (*Eidmannella* Roewer, 1935, *Nesticella* Lehtinen & Saaristo, 1980, and *Nesticus* Thorell, 1869 – RODRIGUES & BUCKUP 2007, PLATNICK 2010).

Nesticus is the richest genus within the family, with five species reported from Brazil (PLATNICK 2010). Males of this genus have the paracymbium relatively larger than the paracymbium of males of *Nesticella*, bearing at least two processes (RODRIGUES & BUCKUP 2007). Females, on the other hand, can be diagnosed by the prominent epigynum (GERTSCH 1984) and the vulval gland with a gland duct (LEHTINEN & SAARISTO 1980, OTT & LISE 2002). The Brazilian species are known only from the southern region and have been recorded in lower vegetation strata and in litter (OTT & LISE 2002).

The scarcity of species of Nesticidae known from Brazil, as well as their restricted geographic distribution, can be a result of sampling deficiencies and lack of attention from local spider taxonomists. This is illustrated in the results of this study, in which we describe a new species based on specimens collected in a recent spider diversity inventory in southeastern Brazil (DE MARIA *et al.* 2009). The species is apparently related to two species of *Nesticus* described from southern Brazil, *Nesticus brignolii* Ott & Lise, 2002 and *Nesticus calilegua* Ott & Lise, 2002 (see OTT & LISE 2002). This assignment is, however, tentative, owing to the lack of phylogenetics studies on Nesticidae. In addition, a

new record is presented for *Nesticus taim* Ott & Lise, 2002, expanding its known distribution range northwards.

MATERIAL AND METHODS

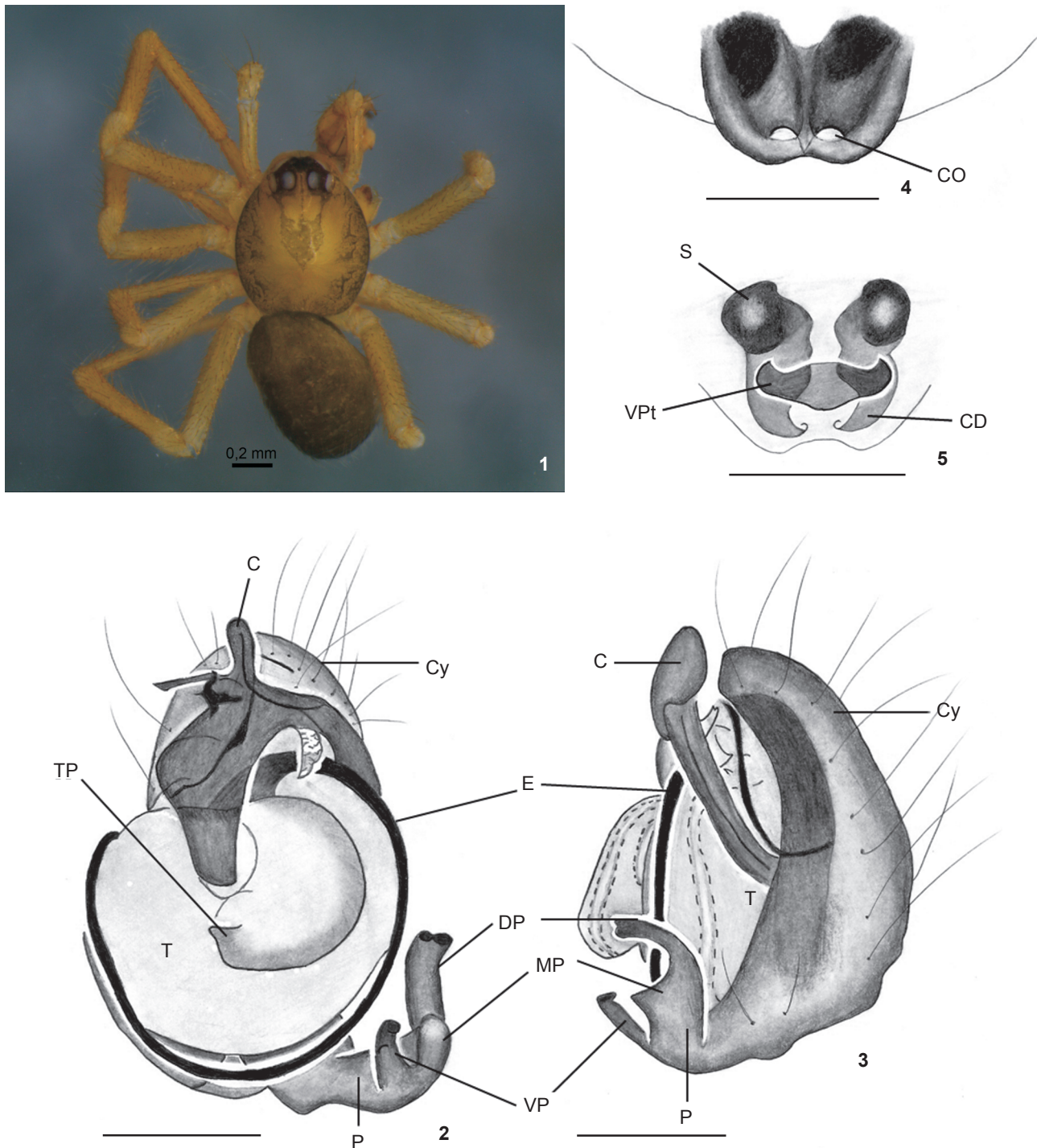
The species described in this study is based on specimens collected with pitfall traps in the Reserva Particular do Patrimônio Natural Mata Samuel de Paula, Nova Lima, state of Minas Gerais, an area of semideciduous Atlantic forest (SALINO *et al.* 2009). All material examined is deposited in the arachnid collection of the Coleções Taxonômicas da Universidade Federal de Minas Gerais, Belo Horizonte (UFMG, curator: A.J. Santos). Specimens were examined and illustrated using a Leica M205C stereoscopic microscope with a camera lucida. Digital images were taken with a Leica DFC500 digital camera attached to a Leica M205C stereoscopic microscope. Pictures taken in several focal planes were assembled in multifocus images with the software Leica Applications Suite Version 3.3.0 (Leica Inc.). All measurements are in millimeters and were made using an Olympus SZ40 stereoscopic microscope with a micrometer eyepiece. The female genitalia was excised, immersed for two hours in a pancreatin solution (see ALVAREZ-PADILLA & HORMIGA 2008) to remove soft tissues, and illustrated immersed in ethanol. The terminology used in descriptions follows GERTSCH (1984).

TAXONOMY

Nesticus ivone sp. nov.

Figs 1-5

Type material. Male holotype (UFMG 2565) from BRAZIL, Minas Gerais: Nova Lima (Reserva Particular do Patrimônio Natural Mata Samuel de Paula, 20°00'S 43°52'W, 967 m), 12-18.X.2006, J.P.P. Pena-Barbosa *et al. leg.* Female paratype (UFMG



Figures 1-5. *Nesticus ivone* sp. nov.: (1-3) male holotype: (1) dorsal view; (2) left palpus, ventral view; (3) ditto, retrolateral view; (4-5) female paratype: (4) epigynum, ventral view; (5) female internal genitalia, dorsal view. (C) Conductor, (CD) copulatory duct, (CO) copulatory opening, (Cy) cymbium, (DP) paracymbium dorsal process, (E) embolus, (MP) paracymbium median process, (P) paracymbium, (S) spermathecae, (T) tegulum, (TP) tegular process, (VP) paracymbium ventral process, (VPt) vulval plate. Scale bars: 0.1 mm.

2566) from the same locality, 29.IV-01.V.2006, J.P.P. Pena-Barbosa *et al. leg.*

Diagnosis. *Nesticus ivone* sp. nov. males resemble *N. brignolii* in the tegulum wider than cymbium, with a central, curved tegular process (Fig. 2). They can be distinguished by both dorsal and ventral paracymbium processes not hooked in *N. ivone* sp. nov. and by the presence of a paracymbium median process (Figs 2 and 3). Females can be recognized by the thick, not coiled copulatory ducts, the absence of vulval gland, and by the presence of a central vulval plate (Fig. 5).

Description. Holotype male. Carapace pale-yellow with grayish-brown pigmentation on the edges and in the middle, eyes circled in grayish-brown (Fig. 1). Thoracic fovea circular. Chelicerae, endites and labium pale-yellow. Sternum grayish-brown. Legs pale-yellow. Abdomen homogeneously greyish-brown. Tegular process located in the center of the tegulum, curved and ending in a small, rounded tip. Embolus filiform, curved in clockwise direction in the left palp. Conductor long vertically, with rounded edges (Figs 2 and 3). Paracymbium with three processes (ventral, median and dorsal), all with rounded edges. Dorsal process larger than the others (Fig. 3). Measurements. Total length 1.32. Carapace 0.64 long, 0.53 wide, 0.42 high. Clypeus 0.05 high. Chelicerae 0.22 long, 0.12 wide. Endites 0.16 long, 0.07 wide. Labium 0.03 long, 0.14 wide. Sternum 0.44 long, 0.38 wide. Abdomen 0.66 long, 0.42 wide, 0.46 high. Legs: I. femur 0.70, patella 0.22, tibia 0.64, metatarsus 0.49, tarsus 0.36, total 2.43; II. 0.51, 0.18, 0.38, 0.36, 0.33, 1.79; III. 0.49, 0.16, 0.24, 0.22, 0.20, 1.32; IV. 0.72, 0.18, 0.60, 0.49, 0.35, 2.36. Palpus: femur 0.29, patella 0.09, tibia 0.09, tarsus 0.31, total 0.79.

Paratype female. Color as in male. Epigynum slightly prominent (Fig. 4). Spermathecae globose. Fertilization ducts inconspicuous (Fig. 5). Measurements. Total length 1.10. Carapace 0.51 long, 0.38 wide, 0.33 high. Clypeus 0.01 high. Chelicerae 0.20 long, 0.11 wide. Endites 0.09 long, 0.07 wide. Labium 0.03 long, 0.11 wide. Sternum 0.27 long, 0.27 wide. Abdomen 0.57 long, 0.36 wide, 0.36 high. Legs: I. femur 0.31, patella 0.12, tibia 0.27, metatarsus 0.24, tarsus 0.22, total 1.18; II. 0.31, 0.11, 0.24, 0.18, 0.20, 1.05; III. 0.27, 0.09, 0.18, 0.16, 0.18, 0.90; IV. 0.36, 0.12, 0.29, 0.24, 0.22, 1.25. Palpus: femur 0.16, patella 0.05, tibia 0.09, tarsus 0.12, total 0.44.

Natural history. All the specimens were collected in the litter in an area of semi deciduous Atlantic Forest.

Distribution. Known only from the type locality.

Etymology. The specific name is a matronym honoring the senior author's mother, Ivone Izabel Teixeira.

Remarks. Male and females were not collected together, but were matched based on body size, shape and color pattern.

Nesticus taim Ott & Lise, 2002

New record. BRAZIL, *Minas Gerais*: Ouro Preto (Parque Estadual do Itacolomi, 20°22'S 43°32'W), 2-4.XI.2007, K.P. Santos *et al. leg.*, 1#m (UFMG 2213).

Remarks. This specimen was collected in a pitfall trap

placed in *Eucalyptus* plantation with a regenerating, Atlantic Forest undergrowth.

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