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INSTITUTO DE CIÊNCIAS BIOLÓGICAS
DEPARTAMENTO DE ZOOLOGIA
PÓS-GRADUAÇÃO EM ZOOLOGIA



**AS ARANHAS PERNA-LONGAS DO GRUPO *TOGATUS*, GÊNERO
MESABOLIVAR (ARANEAE: PHOLCIDAE), DE AMBIENTES CAVERNÍCOLAS
E EPÍGEOS DO BRASIL.**



RICHARD ANTONIO TORRES

BELO HORIZONTE – MINAS GERAIS

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CAVERNÍCOLAS E EPÍGEOS DO BRASIL.**

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Orientador: Adalberto José dos Santo

Coorientador: Leonardo Sousa Carvalho

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ATA DE DEFESA DE DISSERTAÇÃO

RICHARD ANTONIO TORRES CONTRERAS

Ao oitavo dia do mês de junho do ano de dois mil e vinte e um, às dezesseis horas, ocorreu a defesa de Mestrado da Pós-Graduação em Zoologia, de autoria do Mestrando Richard Antonio Torres Contreras intitulada: “**As aranhas perna-longas do grupo *togatus*, gênero *Mesabolivar* (Araneae: Pholcidae), de ambientes cavernícolas e epígeos do Brasil**”. Abrindo a sessão, o Presidente da Comissão, Prof. Dr. Adalberto José dos Santos, após dar a conhecer aos presentes o teor das Normas Regulamentares do Trabalho Final, passou a palavra para o candidato para apresentação de seu trabalho.

Esteve presente a Banca Examinadora composta pelos membros: Alejandro Valdez Mondragón, Jimmy Jair Cabra Garcia, e demais convidados. Seguiu-se a arguição pelos examinadores, com a respectiva defesa do candidato.

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Nada mais havendo a tratar, o Presidente da Comissão encerrou a reunião e lavrou a presente ata, que será assinada por todos os membros participantes da Comissão Examinadora.

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Dedicado a todas as meninas, meninos, jovens,
mulheres e homens que perderam suas vidas
como resultado da guerra na Colômbia. Para
todos, paz, para todos tudo.

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*"Nosotros nacimos de la noche
En ella vivimos
Moriremos en ella
Pero la luz será mañana para los más,
para todos aquellos que hoy lloran la noche,
para quienes se niega el día,
Para todos la luz,
Para todos todo"
Emiliano Zapata (1918)*

Advertência

Esta monografia não é uma publicação, conforme descrito no capítulo 3 do CÓDIGO INTERNACIONAL DE NOMECLATURA ZOOLOGICA. Portanto, as mudanças taxonômicas propostas aqui não têm validade para fins de nomenclatura.

Warning

This monograph is not a publication as described in the third chapter of the INTERNATIONAL CODE OF ZOOLOGICAL NOMECLATURE. Hence the taxonomic changes proposed here are not valid for nomenclatural purposes..

RESUMO

As aranhas do gênero *Mesabolivar* estão entre os grupos de aranhas mais diversificados e melhor estudados do Neotrópico. No Brasil, regista-se um 84% da diversidade total do gênero, sendo a maior parte proveniente da Mata Atlântica e do Cerrado. Dentre do gênero, o grupo *togatus*, destaca-se por apresentar uma alta diversidade, endemismo e potencial de grande número de novas espécies no Brasil. Com base em espécimes disponíveis nas principais coleções biológicas do Brasil e em material coletado durante 5 expedições de campo, no Cerrado e na Mata Atlântica brasileira, do estado de Minas Gerais, aqui descrevemos e ilustramos 16 novas espécies de *Mesabolivar* pertencentes ao grupo *togatus*. Com isso, as espécies descritas do gênero aumentaram a 110 espécies, e a 32 espécies do grupo *togatus*. Entre as espécies do grupo *togatus*, só 4 foram encontradas exclusivamente em ambientes subterrâneo, 12 em ambientes epígeos e 16 foram encontradas em ambos ecossistemas. Além disso, é disponibilizado um mapa de distribuição das espécies do grupo, de acordo com os diferentes biomas do Brasil, onde mostra-se que, a Mata Atlântica brasileira apresenta a maior diversidade do grupo.

Palavras Chaves: Modisiminae, taxonomia, espécies novas, Cerrado, Mata Atlântica.

ABSTRACT

The spiders of the genus *Mesabolivar* are among the most diverse and well-studied groups of spiders in the Neotropics. In Brazil, 84% of the total diversity of the genus is recorded, with the majority coming from the Atlantic Forest and the Cerrado. Among the genera, the *togatus* group stands out for presenting a high diversity, endemism and potential for a large number of new species in Brazil. Based on specimens available in the main biological collections in Brazil and on material collected during 5 field expeditions, in the Brazilian Cerrado and the Atlantic Forest, in the state of Minas Gerais, we describe and illustrate here 16 new species of *Mesabolivar* belonging to the group *togatus*. With this, the described species of the genus increased to 110 species, and to 32 species of the *togatus* group. Among the species of the *togatus* group, only 4 were found exclusively in subterranean environments, 12 in epigeal environments, and 16 were found in both ecosystems. In addition, a distribution map of the species of the group is available, according to the different biomes of Brazil, showing that the Brazilian Atlantic Forest has the greatest diversity of the group.

Keywords: Modisiminae, taxonomy, new species, Cerrado, Atlantic Forest.

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INTRODUÇÃO GERAL.

As aranhas representam um antigo e diversificado grupo de artrópodes terrestres, com mais de 49.000 espécies compreendidas em 129 famílias (Platnick, 2020; World Spider Catalog, 2021). A família Pholcidae Koch, 1851, com 1.826 espécies inseridas em 94 gêneros, representa a nona família com a maior diversidade de aranhas no mundo. Essa família, compreende aranhas comumente conhecidas como “aranhas pernalongas” ou “aranhas treme-treme” haplóginas, de pequeno a médio tamanho (aproximadamente de 1 a 15 milímetros), com pernas geralmente 2 a 25 vezes maiores que o comprimento do corpo e, em sua maioria, de aparência corporal frágil (Fig. 1, Platnick et al. 1991; Huber, 2000; 2011). Os Pholcidae ocupam ampla variedade de ecossistemas, que vão desde ambientes naturais até antropogênicos, pelo que são catalogados como cosmopolitas. Porém, a maior diversidade destes organismos está concentrada nas regiões tropicais e subtropicais (Huber, 2003; 2005; Kobelt & Nentwig, 2007).

A família Pholcidae pertence ao clado das aranhas Synspermiata e, dentro a superfamília Scytodoidea, tem como grupo irmão o clado Diguettidae+Plectreuridae (Coddington & Levi, 1991; Platnick et al. 1991; Huber, 2000; Coddington, 2005; Huber, 2011; Dimitrov et al. 2013; Wheeler et al. 2017). Os folcideos apesar de sua alta diversidade, o monofiletismo da família é fortemente suportado em todas as análises filogenéticas atuais (Coddington, 2005). Dentre suas sinapomorfias, destacam-se os pedipalpos masculinos fortemente modificados, com uma estrutura copulatória exclusiva desta família (o procurso); clipeo alto; e quelíceras masculinas com modificações, como apófise, cerdas modificadas, cones e espinhos; tarsos pseudosegmentados e três tricobótrias na tíbia das pernas (Huber, 2000). Atualmente são reconhecidas cinco subfamílias dentro de Pholcidae: Smeringopinae Simon, 1893, Pholcinae C.L. Koch, 1850, Ninetinae Simon, 1890, Arteminae Simon, 1893 e Modisiminae Simon, 1893 (Huber, 2011), todas elas recuperadas como monofiléticas, mas ainda com relações incertas entre si (Dimitrov et al. 2013; Eberle et al. 2018).

A subfamília Modisiminae se destaca entre os folcideos por sua ampla variação morfológica e ecológica. Seus representantes encontram-se entre as aranhas de teia mais

comuns das florestas neotropicais, onde ocupam uma grande variedade de microhabitats, desde a serapilheira até dosse. Atualmente, a subfamília é composta por 480 espécies em 24 gêneros, uma das mais diversas de Pholcidae. Nela estão agrupados folcídeos que apresentam uma apófise retrolateral na coxa do palpo do macho, receptor exposto no órgão tarsal e gonópore do macho sem fúsculos epiândricos (Dimitrov et al. 2013; Huber 2011). Esse clado inclui o gênero *Mesabolivar* González-Sponga, 1998 (Fig. 1), que é um dos gêneros mais abundantes e bem distribuídos da América do Sul, e com muitas espécies ainda não descritas entre os folcídeos do Novo Mundo (Huber et al. 2018).



Figura 1. Aspecto geral de uma aranha perna-longa, *Mesabolivar* L17-080, espécie pertencente ao grupo *togatus*, encontrado no Parque Nacional das Cavernas do Peruaçu, em Minas Gerais, sudeste do Brasil. Fonte: L. S. Carvalho, 2020.

No Brasil, *Mesabolivar* representa o maior gênero de Pholcidae, com 79 espécies descritas (Huber, 2000; 2015; 2018a). Apesar de ainda existirem dúvidas a respeito dos limites do gênero, *Mesabolivar* é um dos gêneros de folcídeos mais estudados da Região Neotropical, tanto quanto à sistemática quanto com relação a aspectos morfológicos e biológicos (Eberhard & Briceño, 1983; Eberhard & Briceño, 1985; Huber 1999, 2000; Huber et al. 2005, 2018a; Machado et al. 2007a, b, c). Atualmente, sabe-se que

Mesabolivar é composto por dez grupos de espécies, a maioria deles monofiléticos (Huber 2000, 2018a). O grupo *togatus*, o foco deste estudo, inclui atualmente 16 espécies, de grande porte (4–6 mm de comprimento corporal), que ocorrem no sub-bosque, serapilheira e no meio hipógeo, em áreas da Mata Atlântica, Caatinga e Cerrado brasileiro (Fig. 2) (Huber 2018a). Caracterize-se por apresentar uma apófise prolateral na parte distal do procurso, um ou dois pares de apófises frontais na armadura quelíceral dos machos, o epígino com três lóbulos esclerotizados ventrais, separados por uma cutícula esbranquiçada e a genitália interna das fêmeas com placas porosas laterais orientadas longitudinalmente.

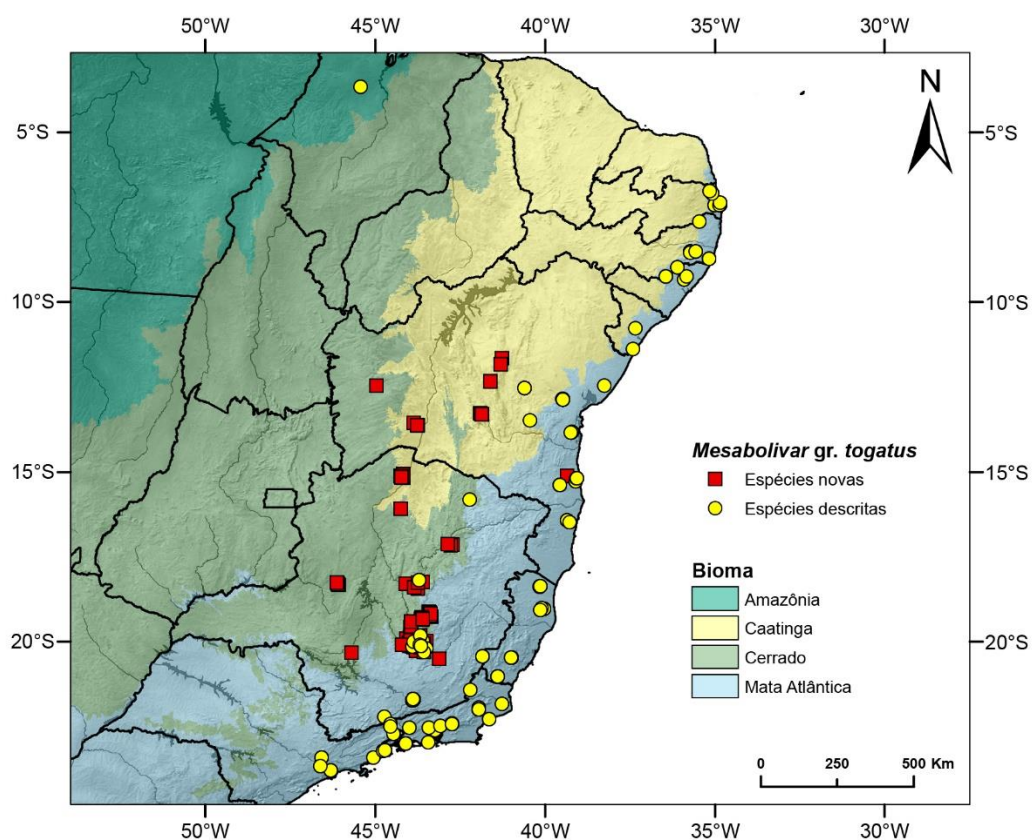


Figura 2. Pontos de ocorrência das espécies de *Mesabolivar* do grupo *togatus*, em diferentes biomas, incluindo táxons já descritos (círculos amarelos) e táxons propostos neste trabalho (quadrados vermelhos). Fonte: L.S. Carvalho, 2021.

Esta dissertação é produto de um estudo sobre a diversidade de aranhas associadas a ambientes cavernícolas e epígeos em áreas da Mata Atlântica e Cerrado. Embora os Pholcidae sejam frequentemente associados a ambientes hipógeos, a riqueza em espécies cavernícolas da família no Brasil é, claramente, uma subestimativa da diversidade real (Huber, 2018b). Além disso, a falta de estudos abrangentes, baseados no exame de

espécimes coletados em cavernas e em ambientes epígeos torna especialmente difícil a classificação das espécies quanto a seu grau de dependência de ambientes hipógeos. Assim, nesta dissertação ampliamos o conhecimento sobre *Mesabolivar* do grupo *togatus* no Brasil, a partir de material disponível em coleções biológicas de expedições de coletas em ambientes cavernícolas.

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THE DADDY LONG-LEGS SPIDER SPECIES OF THE TOGATUS GROUP OF THE GENUS *MESABOLIVAR* (ARANEAE: PHOLCIDAE) FROM CAVE AND EPIGEAN HABITATS IN BRAZIL.

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ABSTRACT

We describe and illustrate 16 new species of the *Mesabolivar* belonging to the *togatus* group, based on specimens available in biological collections and our own field work. With this, the described species of the genus it raised to 110 species and to 32 species of the *togatus* group.

Keywords: Modisiminae, taxonomy, new species, Cerrado, Atlantic Forest.

INTRODUCTION

Mesabolivar González-Sponga, 1998 is a conspicuous and diverse genus of Pholcidae, endemic to South America. With 94 species, it is one of the most diverse and abundant pholcid genera in Neotropical forests (Huber 2018a; World Spider Catalog 2021). The genus is composed of large and small-sized, long-legged spiders (total length 4–6 mm) with greenish, reddish or brownish color (Huber 2000; 2015; 2018a). They are commonly

found in webs in dark, humid places in plant foliage, in the leaf litter, and rock crevices in epigeal and hypogean ecosystems (Huber 2000; 2018).

The monophyly and generic limits of *Mesabolivar* are still contentious, which is a consequence of its wide diversity (Huber *et al.* 2018; Huber 2018a; Eberle *et al.* 2018). The current internal classification of the genus includes 10 species groups, most of them monophyletic (Huber 2018a). Among them, the *togatus* species group, the focus of this study, was first recognized as a grade within the “southern clade” of Huber (2000). However, the group recently emerged as monophyletic in more comprehensive analyses (Huber *et al.* 2018; Eberle *et al.* 2018). The group currently comprises 16 species distributed in the Brazilian Cerrado, Caatinga and Atlantic Forest, but its diversity is estimated to be much greater (Huber 2015). Our experience suggests that several undescribed species of the genus are already deposited in biological collections. However, part of the diversity of the group, as well as of other pholcid genera, still await discovery in the field. This is particularly true for cave-dwelling species, since pholcids are particularly abundant in hypogean habitats, especially in Brazil (*e.g.*, Trajano & Bichuette 2010; Gallão & Bichuette 2018). However, despite its ubiquity, cave-dwelling pholcids have not received their due share of attention from taxonomists (Huber 2018b).

In the present study, we describe 16 new species of *Mesabolivar* of the *togatus* species group, from Brazil, 11 of them recorded in karstic areas and ferruginous formations. Additionally, we provide new records and updated distribution maps for all described species in the group.

MATERIAL AND METHODS

The material examined in this study was obtained from the following institutions: Centro de Coleções Taxonômicas, Universidade Federal de Minas Gerais (UFMG; Belo Horizonte, MG; curator A. J. Santos); Coleção de História Natural da Universidade Federal do Piauí (CHNUFPI; Floriano, PI; curator J. F. Vilela); Laboratório Especial de Coleções Biológicas, Instituto Butantan (IBSP; São Paulo, SP; curator A. D. Brescovit) and Museu de Zoologia, Universidade de São Paulo (MZSP; São Paulo, SP; curator R. Pinto da Rocha). Most specimens deposited in the first institution were collected during

six field expeditions in karstic areas and ferruginous formations in the state of Minas Gerais, Brazil. The specimens were collected through active search, between February 2020 and January 2021, in the following locations: Parque Nacional Cavernas do Peruaçu, Itacarambi and Januária municipalities; Parque Nacional Serra do Gandarela, Rio Acima and Santa Bárbara municipalities; Parque Nacional da Serra do Cipó, Santana do Riacho; Parque Estadual do Sumidouro, Lagoa Santa; Parque Estadual da Serra do Rola-Moça, Nova Lima; Parque Estadual do Ibitipoca, Lima Duarte and Santa Rita do Ibitipoca municipalities.

The taxonomic descriptions are based on the male holotype and follow the style of Huber (2015, 2018). All measurements are in mm. The female epigyne was extracted using entomological pins and immersed in pancreatin to visualize the internal structures (Álvarez-Padilla & Hormiga 2007). In the case of males, the chelicerae and the left palp (when available) were extracted to view the apophyses and keels in different body plans. The specimens were photographed using a Leica DFC500 digital camera coupled to a Leica M205C stereomicroscope. Minute structures were photographed in a Zeiss Primostar compound microscope with an AxioCam ERc5s digital camera. Images were generated in different focal planes and then processed to form multi-focus images in Leica Applications Suite version 3.3.0 (Leica Inc) and Helicon Focus 6®. The images were processed in the Adobe Lightroom Classic® and Photoshop® softwares to adjust technical parameters (lights, shades, blacks, etc.), correct imperfections and extraction of background for assembling the plates. The geographical coordinates of the points of occurrence of the species were obtained by means of a GPS, or searching in gazeteers (e.g., Google Earth), when not available. The points of occurrence were plotted on maps in the software ArcGIS 10.4.

The following abbreviations are used in species descriptions: ALE: anterior lateral eyes; ALS: anterior lateral spinnerets; AME: anterior median eyes; a.s.l.: above sea level; L/d: length/diameter; PME: posterior median eyes.

TAXONOMY

Mesabolivar González-Sponga, 1998

Mesabolivari González-Sponga, 1998: 27. Type species by original designation: *M. pseudoblechroscelis* González-Sponga, 1998.

Mesabolivar — Huber 2000: 189 (genus name emended); Huber 2015: 5; World Spider Catalog 2021 (complete synonymic list).

Diagnosis. The members of *Mesabolivar* can be distinguished from other pholcid genera by the following combination of characters: in males, presence of one or two pairs of frontal apophyses in the chelicerae, and procurus long and dorsally curved. In females, epigynum with a median groove or pocket.

Notes. The taxonomic limits of *Mesabolivar* are still uncertain, because of the genus wide diversity and the fact that it emerged as non-monophyletic in most recent phylogenetic studies (Huber 2000, Huber *et al.* 2018). All the species described herein match the generic diagnosis proposed by Huber (2000; 2015) and belong to the southern clade of *Mesabolivar* (*sensu* Huber *et al.* 2018; Huber 2018). In addition, all of them belong to the *togatus* group, as delimited by Huber (2018).

Composition. 110 species distributed in ten operational species groups: *difficilis* (25 spp.), *togatus* (32 spp.; 16 spp. newly described herein), *pseudoblechroscelis* (11 spp.), *aurantiacus* (8 spp.), *iguazu* (8 spp.), *bonita* (4 spp.), *cyaneotaeniatus* (4 spp.), *kathrinae* (4 spp.), *xingu* (4 spp.), *spinulosus* (3 spp.).

***togatus* group**

Diagnosis (based on Huber, 2018). Members of this group are distinguished from other *Mesabolivar* by the presence of a conspicuous prolateral apophysis in the distal part of the procurus (*e.g.* Figs 3A, 10A, 14A); by one or two pairs of frontal apophyses in the male chelicerae (*e.g.* Figs 2D-C; 5D-E, 20D-E); by the female epigynum with three ventral sclerotized lobes, separated by a membranous cuticle (*e.g.* Figs 7E, 16H) and by

the vertical shape of the lateral porous plates of the female internal genitalia (e.g, Figs 2H, 4k, 11B).

Composition. *M. baianus* Huber, 2018, *M. bico* Huber, 2018, *M. botocudo* Huber, 2000, *M. buraquinho* Huber, 2018, *M. caipora* Huber, 2015, *M. camacan* Huber, 2018, *M. ceruleiventris* (Mello-Leitão, 1916), *M. claricae* Huber, 2018, *M. cyaneomaculatus* (Keyserling, 1891), *M. inmanis* Huber, 2018, *M. madalena* Huber, 2018, *M. maxacali* Huber, 2000, *M. mimoso* Huber, 2018, *M. nigridentis* (Mello-Leitão, 1922), *M. similis* Huber, 2018 e *M. togatus* (Keyserling, 1891), *M. R20-008 sp. n.*, *M. R20-015 sp. n.*, *M. L17-104 sp. n.*, *M. L17-205 sp. n.*, *M. R20-003 sp. n.*, *M. L17-208 sp. n.*, *M. L17-209 sp. n.*, *M. L17-097 sp. n.*, *M. L17-068 sp. n.*, *M. L17-073 sp. n.*, *M. L17-078 sp. n.*, *M. L17-083 sp. n.*, *M. L17-080 sp. n.*, *M. L17-099 sp. n.*, *M. L17-089 sp. n.*, *M. L17-086 sp. n.*

Distribution. Eastern Brazil, from the states of Maranhão and Paraíba to São Paulo (Fig. 27).

Natural history. All *Mesabolivar* species belonging to the *togatus* groups are known to occur in the Cerrado, Caatinga and Atlantic Forest of Brazil. In the Atlantic Forest (Fig. 27), the species are found in drier areas in Restinga ecosystems on sandy coastal plains in Northeastern Brazil (e.g., *M. buraquinho* and *M. caipora*) or in ombrophile forests in Northeastern (e.g., *M. L17-086*, *M. buraquinho*, *M. camacan*, *M. baianus*) (Figs 26E, F) and Southeastern (e.g., *M. togatus*, *M. cyaneomaculatus*, *M. mimoso*, *M. madalena*) Brazil. Within the arid or semiarid biomes, such as Cerrado and Caatinga, the epigeal species are usually associated to forested enclaves along the water courses (e.g., *M. L17-205* and *M. L17-068*) (Figs 12A, B, C, D), while others are found inside caves and their surroundings (e.g., *M. R20-003*, *M. L17-080* and *M. R20-015*) (Figs 25A, B, C, D). Inside caves, most species have been observed in the twilight zone or early in the aphotic zone, being absent in deep in the aphotic zone. Additionally, a few species have been recorded to synanthropic environments, such as *M. baianus*, *M. L17-078*, *M. L17-080* and *M. R20-003*.

Mesabolivar L17-068 **sp. n.**

Figs 2A-I; 3A-B

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Rio Acima, Parque Nacional da Serra do Gandarela, Caverna GAND 56 cave, 20°6'21''S 43°40'25.1''W, 1558 m.a.s.l., 27-iii-2020, R.A. Torres & B.T Faleiro leg. (UFMG 24699). **Paratypes.** Same data as the holotype, 1♂ 2♀ (UFMG 24698, 24700, 24701).

Other material examined. BRAZIL: *Minas Gerais*: Ouro Preto, Floresta Estadual do Uaimii, 20°17'47.73''S 43°34'28.9''W, 1012 m.a.s.l., 2.xii.2012, A. Anker & P.H. Martins leg., 1♂ (UFMG 22172). P.H. Martins leg., 4 ♀ Same (UFMG 13097). Brumadinho, Gruta Beira de Estrada cave, 20°6'51''S 43°58'59''W, 4-v-2014, L.S. Carvalho *et al.* leg., 2♂ (CHNUFPI 3780, UFMG 22018). Cachoeira Azul, Serra da Calçada, 20°7'21''S 43°59'39.6''W, 1226 m.a.s.l., 4-v-2014, L.S. Carvalho *et al.* leg. 1♂, 1♀ (CHNUFPI 1282); Parque Estadual da Serra do Rola Moça, 20°5'17''S 44°12'29''W, 757 m.a.s.l., 16-xii-2010, H. Thomassen leg., 1♀ (UFMG 7347); Caverna RM-33 cave, 20°2'5.8''S 43°59'40.7''W, 1379 m.a.s.l., 12-i-2021, R.A. Torres & B.T. Faleiro leg., 2♂ 10♀ (UFMG 24594–24597, 24665); Caverna RM-38 cave, 20°0'48.7''S 43°58'43.3''W, 1375 m.a.s.l., 14-i-2021, R.A. Torres & B.T. Faleiro leg., 5♂ 24♀ (UFMG 24667–24669); Caverna RM-39 cave, 20°0'55.8''S 43°58'38.1''W, 1285 m.a.s.l., 14-i-2021, R.A. Torres & B.T. Faleiro leg., 23♂ 33♀ (UFMG 24581–24585, 24661–24664); unnamed cave, 20°0'55.6''S 43°58'38.6''W, 1273 m.a.s.l., 14-i-2021, R.A. Torres & B.T. Faleiro leg., 8♂ 5♀ 1 juv. (UFMG 24572–24580, 24660); Caverna RM-31 and RM-32 caves, 20°2'9.8''S 43°59'37.8''W, 1338 m.a.s.l., 12-i-2021, R.A. Torres & B.T. Faleiro leg., 4♂ 2♀ (UFMG 24601–24605); Caverna RM-18 cave, 20°3'26''S 44°0'48''W, 1418 m.a.s.l., 11-i-2021, R.A. Torres & B.T. Faleiro leg., 4♂ 1♀ (UFMG 24589–24593); Caverna RM-01 cave, 20°3'27''S 44°0'39''W, 1435 m.a.s.l., 11-i-2021, R.A. Torres & B.T. Faleiro leg., 5♂ 12♀ (UFMG 24598–24600, 24666, 24720, 24721); Caverna RM-03 cave, 20°2'37.1''S 44°0'21.4''W, 1338 m.a.s.l., 13-i-2021, 1♂ 2♀ (UFMG 24586–24588). Rio Acima, Vargem Grande, Cave VG-01 cave, 20°9'9''S-43°49'0''W, 2 to 10-vii-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179341); VG-08 cave, 20°6'26''S-43°54'3''W, 02 to 10-viii-2011, R. Andrade & I. Cizauskas *et al.* leg., 4 ♂ (IBSP 179339, 179342). 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 3♂ 1♀ (IBSP 179567-179569); VG-10 cave, 20°5'41''S-43°57'15''W, 02 to 10-viii-2011, R. Andrade & I. Cizauskas *et al.* leg., 1 ♂ (IBSP 179343). VG-11 cave, 20°5'57''S-43°56'55''W, 02 a 10-viii-2011, R. Andrade & I. Cizauskas *et al.* leg., 4♂ 1♀ (IBSP 179344, 179346, 179347); 26-v-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179515). VG-13

cave, 20°5'20''S-43°57'29'W, 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179570); VG-16 cave, 20°5'40''S-43°57'17'W, 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179571); VG-17 cave, 20°5'40''S-43°57'18'W, 2 to 10-vii-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♂ (IBSP 179348); 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♂ (IBSP 179572); VG-18 cave, 20°7'42''S-43°54'27'W, 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 4♀ (IBSP 179573-179575); VG-20 cave, 20°7'24''S-43°54'4'W, 2 to 10-viii-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♂ (IBSP 179350); 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♂ 1♀ (IBSP 179576-179577). VG-21 cave, 20°7'16''S-43°54'9'W, 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179579); VG-25 cave, 20°7'25''S-43°53'36'W, 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179580). VG-26 cave, 20°6'60''S-43°53'55'W, 2 to 10-viii-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♂ (IBSP 179287); VG-36 cave, 20°8'44''S-43°52'51'W, 1-iv-2011, R. Andrade & I. Cizauskas *et al.* leg., 1♀ (IBSP 179588). Parque Nacional da Serra do Gandarela. Caverna GAND-56 cave, 20°6'21''S-43°40'25.1''W, 1558 m.a.s.l., 27-iii-2020, B.T. Faleiro & R.A. Torres leg., 5♂ 3♀ (UFMG 24705-24711, 24718). Caverna GAND 016 cave, 20°5'39.2''S 43°41'6.9'W, 1541 m.a.s.l., 25-iii-2020, R.A. Torres & B.T. Faleiro leg., 1♂ 3♀ (UFMG 24714-24716); Cavernas GAND 18, 104 and 105 caves, 20°5'18.7''S 43°41'35.4''W, 1431 m.a.s.l., 24-iii-2020, R.A. Torres & B.T. Faleiro leg., 2♂ (UFMG 24717, 24719). Caeté, Gruta da Piedade cave, 19°49'6''S 43°40'34.4''W, 1454 m.a.s.l., 15-xii-2012, L. Emerich *et al.* leg., 2♀ (UFMG 20223, IBSP 171864); Gruta do Chuveirinho cave, 19°49'0.7''S 43°40'42.2''W, 1409 m.a.s.l., 25-iii-2012, M.E. Bichuette *et al.* leg., 1♂ 2♀ (UFMG 20263, IBSP 171917). Nova Lima, RPPN Mata Samuel de Paula, 20°00'S - 43°52'W, 14-x-2006, J.P.P. Pena-Barbosa *et al.* leg., 1♂ 1♀ (UFMG 1330).

Diagnosis. Specimens of *M. L17-068* are very similar to those of *M. L17-205* in the shape and format of the frontal median apophyses of the male chelicerae and the female epigynum. However, *M. L17-068* can be distinguished by the the procurus with the prolateral apophyses larger and closer to the membranous processes in the procurus tip, and by the more developed proximal cheliceral apophyses (Figs 2C-D). Females can be distinguished the epigynum wider than long median pocket (Fig. 2G), and the internal genitalia with porous plates medially curved (Fig. 2H).

Description. Male (holotype). Measurements. Total body length 4.65, carapace width 1.91. Distance PME-PME 0.18, diameter PME 0.15, distance PME-ALE 0.18, distance AME-AME 0.03, diameter AME 0.08. Sternum width/length: 1.27/0.56. Leg 1: 79 (13.8 + 0.75 + 14.25 + 24.75 + 3.5), tibia II: 9.6, tibia IV: 6.45, tibia I L/d: 78. Femora I–IV width (at half length): 0.25, 0.31, 0.33.

Color. Carapace dark orange in color; with a large, greenish-brown medium oval marking that includes the back of the ocular area; sternum orange; legs brown, femora with dark brown and white rings distally, tibiae with the similar rings but proximal and distal. Genital area orange.

Body. Habitus as in Figs. 2A-B; ocular tubercle raised; carapace with median groove; sternum and clypeus unchanged.

Chelicerae. As in Fig. 2C-D; with two pairs of frontal apophyses, both proximal, the largest ones obliquely projected mesally; the other cone-shaped and sharp.

Palps. As in Figs 3A-B; coxa with a small retrolateral hump with few thick setae; trochanter barely modified; femur with retrolateral apophysis strongly widening proximally and distally, with oval dorsal edge; tarsus with abundant dorsal setae; procurus moderately curved medially, tip with a thin and slightly prolonged prolateral process, on the retrolateral border with a conspicuous curve; bulb partially sclerotized.

Leg. Without spines, without curved setae and with few vertical setae; retrolateral trichobothrium on tibia I at 2%; tarsus I with >40 pseudosegments, distally fairly distinct.

Female (paratype UFMG 24698). Similar to the male (Figs 2E-F), with the abdomen more rounded. Epigynum as in Figs 2F, G, I, with two lateral apophyses that join in posterior view, forming a convex surface; in lateral view with a curvature at the tip. Internal genitalia with pair of large pore-plates in vertical lateral position (Fig. 2H).

Variation. Some specimens have light orange legs and the abdomen with a brownish distal, ventral spot. The width of the median pocket of the epigynum is slightly variable, though always wider than long.

Distribution. Known from a few localities in the Brazilian state of Minas Gerais (Fig. 30).

Natural history. The species can be found in low vegetation and undergrowth, in forests near cities (Figs 26A-B), and also in cave walls.

Mesabolivar L17-205 **sp. n.**

Figs. 1C; 4A-L

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Santa Bárbara, Serra do Baú, Povoado de Paiol, 20°2'23"S 43°34'29"W, 24 to 30-x-2008, B.V.S. Pimenta & M.W.E. Faria leg. (UFMG 4604). **Paratype.** BRAZIL: *Minas Gerais*: Santa Bárbara, Estação de Preservação e Desenvolvimento Ambiental de Peti, 19°58'23"S-43°29'57"W, 820 m.a.s.l., 9-xii-2012, G.H.F. Azevedo *et al.* leg., 1♀ (UFMG 13157). Catas Altas, RPPN Santuário do Caraça, Trilha do Tabulão, 20°4'51.2'S 43°30'18.6"W, 1177 m.a.s.l., 13-viii-2017, P.H. Martins & P. Russo leg., 1♂ (CHNUFPI 3583).

Diagnosis. The species is similar to *M.* L17-68 in the shape of the epigynum and the armature of male chelicerae. *M.* L17-205 can be distinguished by the two pairs of apophyses in the male chelicerae located more proximally located (Figs 4F-G); the less developed proximal cheliceral apophysis; the tip of the procurus with small membranous processes and greater prolateral apophyses (Fig. 4C). Females can be recognized by the oval anterior plate of the epigynum (Fig. 4J) the median pocket with approximately half the width of those of *M.* L17-068, larger than longer, and the internal genitalia with parallel and enlarged posterior border of the porous plates (Fig. 4K).

Description. Male (holotype). Measurements. Total body length 3.39, carapace width 1.47. Distance PME-PME 0.18, diameter PME 0.13, distance PME-ALE 0.18, distance AME-AME 0.02, diameter AME 0.03. Sternum width/length: 1.09/0.75.

Color. Carapace dark orange in color, strongly darkened towards the center; abdomen dorsally light orange, ventrally dark orange except in the final region of where orange-brown.

Body. Habitus as in Figs 4A-B; ocular tubercle raised; carapace with median groove; sternum and clypeus unchanged.

Chelicerae. As in Figs 4F-G; with two pairs of frontal apophyses, both proximal, being that the most proximal is cone-shaped and has a fine tip, the other is much larger, straight and with a flat tip.

Palps. As in Figs 4C-E; coxa with punctate retrolateral apophysis; femur with retrolateral apophysis proximally, widened distally; tarsus with a small dorsal hump close to the midline; procurus with keels mid to tip, prolateral keel with slightly serrated edge.

Female (**paratype UFMG 13157**). Similar to the male (Figs 4H-I). Tibia 1: 8.7. Epigynum, as in Fig. 4I, J, L, with a pair of processes and small medium oval pocket and internal genitalia as in Fig. 4K (see diagnosis).

Distribution. Known only from two close (less than 10 km apart) localities in the Brazilian state of Minas Gerais (Fig. 32).

Natural history. Specimens from RPPN Santuário do Caraça were collected under large rocks, along a water course (Figs 26C-D), on typical Pholcidae sheet webs.

Mesabolivar L17-073 **sp. n.**

Figs 5A-E

Type material. ♂ **Holotype**, BRAZIL: *Bahia*: São Desidério, Buraco da Sopradeira, 12°26'56"S–44°57'57.4"W, 606 m.a.s.l., 23-iv-2012, Equipe Laboratório de Estudos Subterrâneos leg. (UFMG 20220).

Diagnosis. The males of *M.* L17-073 species resembles *M. buraquinho* and *M. camacan* by the shape and position of the male cheliceral apophyses. *M.* L17-073 differs by the male chelicere with the apical apophysis with oval shape and located in a depression on the median border, barely visible in a lateral view; the other one cone-shaped with a pointed tip, outwards directed in a frontal view and located proximally (Fig. 5D-E); by the shape of the tip of the procurus (Figs 5A-C).

Description. Male (**holotype**). Measurements. Total body length 3.5, carapace width 1.4. Distance PME-PME 0.15, diameter PME 0.1, distance PME-ALE 0.13, distance AME-

AME 0.02, diameter AME 0.03. Sternum width/length: 1.02/0.14. tibia II: 9.3, tibia III: 6.07, tibia IV: 9.75, Femora II–IV width (at half length): 0.28, 0.25, 0.2.

Color. Orange-yellow carapace, with a large vertical brown band in the thoracic groove, extending to the ocular tube; legs light brown with warm white rings distally on femur and tibia; orange abdomen with bluish gray internal spot; almost imperceptible genital area of very light orange color.

Body. Raised ocular area; carapace with medium groove; clypeus and sternum unmodified.

Chelicerae. As in Figs 5D-E (see diagnosis).

Palps. As in Figs. 5A-C; small in size in relation to body size; coxa with retrolateral pintiform process; barely modified trochanter; femur long, with retrolateral process proximally, with a strong bow medially where it begins to widen; tarsus with irregular dorsal surface and abundant hairs; procurus strongly curved medially, with keel edged edges, distally with a membranous pointed retrolateral apophyse and prolaterally with a flat, oval-tipped apophyse; bulbo genital principalmente membranoso.

Legs. Holotype without leg 1, the other legs present multiple vertical hairs; no spikes.

Female. Unknown.

Natural history. The only known specimen was collected in hypogean environment.

Distribution. Known from a cave in São Desidério, state of Bahia, northeastern Brazil (Fig. 29).

Mesabolivar L17-078 **sp. n.**

Figs 6A-C; 7A-F

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Belo Horizonte, Estação Ecológica da Universidade Federal de Minas Gerais, 19°52'34.6"S–43°58'22.6"W, 841 m a.s.l., iii-2017, A.F. Kumagai et al. leg. (UFMG 21373). **Paratypes.** Same locality as holotype, 19°52'38"S–43°58'16"W, 845 m a.s.l., 25-v-2008, I.L.F. Magalhães et al. leg., 1♀

(UFMG 6372); 28-iii-2016, P.H. Martins & V.S.R. Diniz leg., 1♂, (CHNUFPI 3807); 9 to 24-iv-2014, P.R. Silva *et al.* leg., 11♂ (CHNUFPI 3816).

Other material examined. BRAZIL: *Minas Gerais*: Belo Horizonte, Universidade Federal de Minas Gerais, Faculdade de Educação Física, 19°52'28"S–43°58'22"W, 811 m a.s.l., 4-v-2013, V.S.R. Diniz leg., 1♀ (UFMG 21884); Estação Ecológica da Universidade Federal de Minas Gerais, 19°52'38"S–43°58'16"W, 9 to 24-iv-2014, 845 ma.s.l., P.R. Silva *et al.* leg., 17♂ 33♀ (UFMG 10080, 21885, 21906, 22025-22029, 22060, 4659). Contagem, Condomínio Estância do Hibisco, 19°54'19.8"S–44°5'27"W, 929 m a.s.l., 21-vii-2012, 1♂ (UFMG 22164). Diamantina, 18°14'17.06"S–43°36'39.65"W, 1364 m a.s.l., i-2004, E.S.S. Álvares leg., 1♂ 1♀ (UFMG 1788). Diogo de Vasconcelos, Mata Cães, 20°29'53.8"S–43°6'56.5"W, 655 m a.s.l., 7-ii-2015, 1♀ (UFMG 24040). Gouveia, Fazenda Requeijão, 18°23'48.54"S–43°51'9.06"W, 1168 m a.s.l., 6-i-2013, 1♂ 1♀ (UFMG 11407, 13433); Fazenda Fagundes, Capão, 18°25'35.67"S–43°45'4.56"W, 1071 m a.s.l., 23-ii-2012, P.H. Martins leg., 2♂ 1♀ (UFMG 11254). Itabirito, Sitio Recanto das Rosas, 20°15'12"S–43°48'4"W, 901 m a.s.l., i-2004, E.O. Machado leg., 1♀ (UFMG 1803). Monjolos, Cadeia do Espinhaço, Toca do Geraldo, 18°16'45.7"S–44°6'8.5"W, 662 m a.s.l., 8-vii-2014, Equipe Laboratório de Estudos Subterrâneos leg., 1♂ (IBSP 171879); 22-ii-2014, R. F. Ferreira leg., 1♂ (UFMG 20262). Gruta Pau Ferro, 18°19'4.28"S–44°6'29.89"W, 11-ix-2013, R. F. Ferreira leg., 2♀ (UFMG 20257). Ouro Preto, Floresta Estadual do Uaimii, 20°17'47.73"S–43°34'28.9"W, 1012 m a.s.l., 8-i-2016, A. Anker & P.H. Martins leg., 1♀ (UFMG 22171); Sabará, Bairro Vila Real, 19°53'22.98"S–43°48'18.88"W, 3-vi-2012, F.A. Silveira leg., 1♀ (UFMG 11923). Conceição do Mato Dentro, CAV-0012 cave, 19°6'57"S–43°24'59"W, 12 to 24-ix-2011, R. Andrade & G. P. Perroni *et al.* leg., 1♀ (IBSP 180520); 13 to 17-ii-2012, R. Andrade & G. P. Perroni *et al.* leg., 1♀ (IBSP 180534); CAV-0014 cave, 19°8'15"S–43°24'19"W, 12 to 24-ix-2011, R. Andrade & G. P. Perroni *et al.* leg., 2♀ (IBSP 180521-180527); 12 to 24-ix-2011, R. Andrade & G. P. Perroni *et al.* leg., 2♀ (IBSP 180535, 180536). Morro do Pilar, CAV-0006 cave, 19°14'57"S–43°21'8"W, 13 to 17-ii-2012, R. Andrade & G. P. Perroni *et al.* leg., 1♀ (IBSP 180529). CAV-0008 cave, 19°14'37"S–43°23'28"W, 13 to 17-ii-2012, R. Andrade & G. P. Perroni *et al.* leg., 1♀ (IBSP 180530); CAV-0009 cave, 19°14'32"S–43°22'3"W, 13 to 17-ii-2012, R. Andrade & G. P. Perroni *et al.* leg., 3♀ (IBSP 180531-180533); CAV-0018 cave, 19°10'14"S–43°23'47"W, 12 to 24-ix-2011, R. Andrade &

G. P. Perroni *et al.* leg., 2♀ (IBSP 180522, 180528); CAV-0020 cave, 19°10'2''S-43°23'37''W, 12 to 24-ix-2011, R. Andrade & G. P. Perroni *et al.* leg., 1♀ (IBSP 180523); CAV-0023 cave 19°13'16''S-43°23'27''W, 12 to 24-ix-2011, R. Andrade & G. P. Perroni *et al.* leg., 3♀ (IBSP 180524-180526); 13 to 17-ii-2012, R. Andrade & G. P. Perroni *et al.* leg., 1♂ 3♀ (IBSP 180537-180539).

Diagnosis. Males of *M. L17-078* resembles those of *M. R20-015* by the shape of the median cheliceral apophysis, alike a transversal ridge. However, they can be readily distinguished from this species and any other congeners by the very reduced proximal cheliceral apophysis coniform and distally bent, and by the medial cheliceral apophysis strongly sclerotized, wider than long, forming a small keel and located near the median edge (Figs 7A-B). Females can be distinguished from those of *M. R20-015* by the pentagonal anterior plate of the epigynum, with three lobes on the posterior border, the median lobe bears a small depression and the lateral ones form two large, coniform humps (Fig. 7C, E-F).

Description. Male (**holotype**). Measurements. Total body length 3.67, carapace width 1.35. Distance PME-PME 0.1, diameter PME 0.1, distance PME-ALE 0.13, distance AME-AME 0.03, diameter AME 0.08. Sternum width/length: 1.02/0.64. Leg I: 53.24 (11.25 + 0.61 + 11.14 + 20.25 + 2.56), tibia II: 8.25, tibia III: 4.2, tibia IV: 7.65, tibia I L/d: 87. Femora I–IV width (at half length): 0.15, 0.2, 0.23, 0.23.

Color (in ethanol). Light orange prosoma with a vertical dark orange rhombus-shaped band; legs dark orange, on the distal part of the joints slightly darker; Orange-gray abdomen with strong and abundant bluish dorsal and lateral spots; orange dark genital area.

Body. Raised ocular area; carapace with strongly depressed median groove; unmodified clypeus and sternum.

Chelicerae. As in Fig. 7A-B, with two pairs of frontal processes, a large spiniform pair, in the proximal midline, and the other pair in the form of a small cone, well proximal.

Palps. In general, as in a *Mesabolivar* L17-208, with small variation in the shape of the prolateral and retrolateral apophyses of the procurus (Fig. 6A-C).

Legs. Without spines, without curved hairs, few vertical hairs, retrolateral trichobothrium on tibia 1 at 2,5%. tarsus I with < 40 pseudosegments, distally fairly distinct

Female (**paratype UFMG 20257**) Similar to the male; Tibia 1: 10.35; epigynum as in Figs 7C, E-F; the pentagonal anterior plate, the posterior border divided by M-shaped blanusca membranes, medially forming a narrow lobe as in *M. baianus*, *M. L17-208* and *M. camacan* (compare Figs 7E-E; 17C; Huber 2018: figs 191, 193, 195), and two lateral ones that extend forming two large coniform processes (Fig. 7C); internal genitalia as in Fig. 7D, with pair of large pore-plates in vertical lateral position, parallel.

Distribution. Known only from the Brazilian state of Minas Gerais (Fig. 30).

Mesabolivar L17-080 **sp. n.**

Figs 8A-H

Type material. ♂ **Holotype** BRAZIL: *Minas Gerais*: Itacarambi, Parque Nacional Cavernas do Peruaçu, Lapa do Cipó cave, 15°3'19.9"S–44°10'54.7"W, 774 m. a.s.l., 9-iv-2020, A.J. Santos *et al.* leg. (UFMG 24681). **Paratypes.** Same data as holotype, 1♀ (UFMG 24682). *Minas Gerais*: Januária, Parque Nacional Cavernas do Peruaçu, Gruta do Janelão cave, 15°6'57.96"S–44°14'29.76"W, 700 m a.s.l., 1-iii-2020, A.J. Santos *et al.* leg., 1♂ 2♀ (UFMG 24678–24680).

Other material examined. BRAZIL: *Minas Gerais*: Itacarambi, Parque Nacional Cavernas do Peruaçu, visitor center, 15°9'22.6"S–44°13'51.5' W, 512 m a.s.l., 29-ii-2020, A.J. Santos *et al.* leg., 2♂ 1♀ (UFMG 24389, 24398, 24422); Near the entrance of the Gruta Olhos D'Água cave, 15°6'47.6"S–44°10'9.4"W, 527 m a.s.l., 4-iii-2020, A.J. Santos *et al.* leg., 9♂ 5♀, 1 juvenil (UFMG 24377–24379, 24419, 24420, 24452–24455); Gruta Olhos D'Água cave, 15°6'47.6"S – 44°10'9.4"W, 527 m a.s.l., 4-iii-2020, A.J. Santos *et al.* leg., 1♂ 1♀ (UFMG 24376, 24415); Near the entrance of the Lapa do Cipó cave, 15°3'19.9"S–44°10'54.7"W, 774 m a.s.l., 3-iii-2020, A.J. Santos *et al.* leg., 6♂ 7♀ 2 juvs. (UFMG 24380, 24385–24387, 24421, 24449–24451, 24613, 24629, 24633, 24391); Lapa do Cipó cave, 15°3'19.9"S–44°10'54.7"W, 774 m a.s.l., 3-iii-2020, A.J. Santos *et al.* leg., 9♂ 15♀ (UFMG 24414, 24399, 24416–24418, 24620, 24628, 24632);

Near the entrance of the Toca do Pedrinho, 15c6'28.5"S–44°10'10.1"W, 543 m. a.s.l., 6-iii-2020, A.J. Santos *et al.* leg., 1♂ 1♀ (UFMG 24400, 24456). Caverna Janelão cave, 15°65'4''S–44°14'27''W, 600 m. a.s.l., 22-vii-2012, M.E. Bichuette & J.E. Gallão leg., 4♂ 4♀ (UFMG 20242, 20248, IBSP 171911, 171919, 171923). Januária, Gruta Janelão cave, 15°6'57.96"S–44°14'29.76"W, 700 m. a.s.l., 1-iii-2020, A.J. Santos *et al.* leg., 11♂ 22♀ 15 juvs, UFMG 24371-24375, 24392-24397, 24612, 24413, 24616-24619, 24621-24623-24630); near the entrance of the Gruta Bonita cave, 15°6'26''S–44°14'26.2''W, 599 m a.s.l., 9-iv-2020, A.J. Santos *et al.* leg., 9 ♂ 7♀ (UFMG 24402–24408, 24411, 24423–24426, 24624-24627); Gruta do Suspiro cave, 15°6'26.4''S– 44°14'28.6''W, 612 m a.s.l., 5-iii-2020, A.J. Santos *et al.* leg., 1♀ (UFMG 24427); near the entrance of the Gruta do Mocó em Fuga cave, 15°8'48.1''S–44°14'23.6''W, 2-iii-2020, A.J. Santos *et al.* leg., 6♂ 5♀ 1 juv. (UFMG 24409, 24410, 24412, 24457, 24458, 24645, 24646). *Bahia*: Carinhanha, Caverna Vila Nova cave, 13°33'14,3''S - 43°52'40,7''W, 710 m a.s.l., 26-vii-2012, M.E. Bichuette & J.E. Gallão leg., 1♂ (UFMG 20228).

Diagnosis. This species can be distinguished from its congeners by the combination of the male chelicerae with two pairs of frontal apophyses located near the midline (as in *M. buraquinho*, *M. camacan*, *M. maxacali* and *M. similis*), the most distal pair rectangular, transversally disposed in a frontal view and well sclerotized, but surrounded by a hyaline area; the proximal pair coniform and distally inclined (Figs 8G-H). Females can be recognized by the epigynum with three lobes on the posterior margin as in most *M. gr. togatus* species, but can be differentiated by the combination of the following characters: wider than long median lobe, very reduced lateral lobes and by the slender arc-shaped pore plates (Figs 8E-F).

Description. Male (holotype). Total body length 4.41, carapace width 1.72. Distance PME-PME 0.15, diameter PME 0.1, distance PME-ALE 0.13, distance AME-AME 0.05, diameter AME 0.03. Sternum width/length: 0.69 / 1.12. Leg I: 62.26 (15.9 + 0.64 + 15.97+27 + 2.75) tibia II: 10.95, tibia III: 6.6, tibia IV: 9.88, tibia I L/d: 89. Femora I–IV width (at half length) on all: 0.28

Color. Carapace pale orange, with a thin dark orange dorsal stripe that includes the ocular area; pale orange sternum; legs very light brown, with distal white rings on the femurs and tibia with the same proximal and distal rings; abdomen with bluish internal

spots dorsally and laterally arranged horizontally; slightly persistent genital area pale orange in color.

Body. Habitus as in Figs 8A-B, raised ocular area, distally inclined; carapace with medium groove; clypeus and sternum unmodified.

Chelicerae. With two pairs of apophyses located near the midline, the most distal, rectangular in dorsal view, strongly sclerotic white aureole surrounding its base, the other, is more proximal, coniform and distally inclined (Figs 8G-H).

Palps. As in Figs 9A-C, in general, as in *M. togatus* (cf. Huber 2000: figs 855–856). being that in this species there are less membranous projections at the tip.

Legs. With few vertical hairs, without thorns; retrolateral trichobothrium on tibia 1 at 2 %; tarsus 1 with >40 pseudosegments, distally distinct.

Female (paratype UFMG 24682). In general, similar to male (Figs 8C-D). Tibia 1: 12. Epigynum as in Fig. 8F. Posterior margin divided between lobes, the median lobe is the most posteriorly projected and with a medial depression, visible in ventral and lateral view (Figs 8F-G); the two lateral lobes almost imperceptible; internal genitalia as in Fig. 8E, with pair of large pore-plates in tent-shaped lateral position, converging anteriorly, almost like in *M. buraquinho* and *M. L17-086* (compare Fig. 12H: Huber 2018: fig 185).

Variation. Females may have tibia 1 smaller in size, up to 10.2; the pair of large pore-plates can be posteriorly widened.

Natural history. The species can be found inside caves, mainly in the twilight zone and the luminous zone. It can also be found in the forest among decaying logs, low vegetation, and rocks(Figs 25C-D).

Distribution. Known only from the Parque Nacional das Cavernas do Peruaçu, northern state of Minas Gerais, southeastern Brazil (Fig. 30)

Mesabolivar L17-083 **sp. n.**

Figs 10A-E; 11A-C

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Presidente Olegário, Lapa Vereda da Palha cave, 18°15'18.77"S–46°7'33.63"W, 27-ix-2013, T. Zepon & L.P.A. Resende leg. (UFMG 20256). **Paratype.** Same data as holotype, 1♀ (UFMG 20245).

Other material examined. BRAZIL: *Minas Gerais*: Pains, Fazenda São Lourenço, 20°19'16.75"S–45°42'33.8' W, 24-iv-2010, A.R. Pepato et al. leg., 1♀ (UFMG 14240). Presidente Olegário, Gruta da Juruva cave, 18°19'19.2"S–46°4'52.9"W, 12-ix-2014, T. Zepon & L.P.A. Resende leg., 1♂ (IBSP 171891). Lapa da Fazenda São Bernardo cave, 18°16'36.83"S–46°6'45.52"W, 10-vi-2014, T. Zepon & L.P.A. Resende leg., 1♂ (IBSP 171889); Lapa Vereda da Palha cave, 18°15'18.77"S–46°7'33.63"W, 10-iv-2014, T. Zepon & L.P.A. Resende leg., 1♀ (IBSP 171874); 22-i-2014, T. Zepon & L.P.A. Resende leg., 3♂ 1♀ (IBSP 171909); Lapa Zé de Sidinei cave, 18°18'5.62"S–46°5'40.63"W, 16-iv-2014, T. Zepon & L.P.A. Resende leg., 1♀ (UFMG 20249); 22-i-2014, T. Zepon & L.P.A. Resende leg., 1♂ 1♀ (UFMG 20254).

Diagnosis. The males of this species resembles those of *M. L17-097*, *M. togatus* and *M. baianus* by the male chelicerae with two pairs of frontal apophyses, one located near the clypeus border and the other medially inserted and well-developed. It can be distinguished by the proximal cheliceral apophysis very reduced, nipple-shaped and retrolaterally projected; and by the robust medial cheliceral apophysis, which is wider than long, keel-like, oblique, and strongly sclerotized (Figs 10D-E). Females can be recognized by the anterior epigynum plate oval, with a median pocket on the posterior border that forms an obtuse angle, and two lateral, large coniform processes (Figs 11A, C).

Description. Male (**holotype**). Measurements. Total body length 4.5, carapace width 1.92. Distance PME-PME 0.15, diameter PME 0.17, distance PME-ALE 0.2, distance AME-AME 0.05, diameter AME 0.03. Sternum width/length: I.19/0.69. tibia III: 6.45. tibia IV: 9.6. Femora III–IV width (at half length): 0.25, 0.23.

Color (in ethanol). Ocher orange prosoma, with a large heart-shaped orange-brown spot, strongly sclerotic ocular area; Light orange abdomen with abundant bluish dorsal and lateral spots; genital area the same color as the prosome.

Body. Ocular area slightly elevated and frontally directed; carapace with medium groove; unmodified clypeus; unmodified sternum.

Chelicerae. As in Figs 10D-E; with two pairs of frontal apophyses (see diagnosis).

Palps. Coxa with a retrolateral flat apex apophyse with thick hair at its tip; trochanter a small conical process; femur widened distally and with a retrolateral apophyse that forms an oval semicircle with the trochanter; tarsus with small coniform dorsal processes; procurus distally widened and strongly curved dorsally, with two high keels, one retrolateral and one dorsal, extending from the midline to the tip, forming a channel between them (Figs 10A-C).

Legs. (Only leg 3 and 4), dark brown; with few vertical hairs; femur and tibia with proximal and distal dark and white rings.

Female (**paratype**) Similar to the male, but light orange in color. Tibia 1: 10.75; epigynum as in Figs 11A-C (see diagnosis); internal genitalia as in Fig. 11B, with pair of large pore-plates in vertical lateral position, parallel to each other, the space between them is more closed posteriorly than anteriorly.

Natural history. The species presents hypogeal and epigeal habits.

Distribution. Known only from the Brazilian state of Minas Gerais (Fig. 30).

Mesabolivar L17-086 **sp. n.**

Figs 12A-H

Type material. ♂ **Holotype**, BRAZIL: *Bahia*: Abaíra, basis of the Serra do Barbado, Catolés district, 13°17'9.1"S–41°53'23.4"W, 1238 m a.s.l., 30-x-2013, L.S. Carvalho & M.B. da Silva leg. (UFMG 19422). **Paratypes.** *Bahia*: Abaíra, near Mata da Tijuquinha, Serra do Barbado, Catolés district, 13°16'8.1"S–41°54'31.5"W, 2-xi-2013, L.S. Carvalho leg., 1♀ (UFMG 15691); Cachoeira da Samambaia, basis of the Serra do Barbado, Catolés district, 13°18'21.6''S–41°51'16''W, 4-xi-2013, Carvalho & M.B. da Silva leg., 1♂ 1♀ (UFMG 19423, CHNUFPI 1161)

Diagnosis. The males of *M.* L17-086 are very similar to the males of *M. togatus*, *M.* R20-003, and *M. baianus* by the shape and position of the cheliceral apophyses (compare with Figs 12E; 21D; Huber 2018: figs 150–155). The males of these species by the distal pair of apophysis less pronounced in lateral view, barely visible; and by the the relatively less curved tip of the anterior cheliceral apophysis (Fig. 12D). Females can be easily differentiated from the remaining species of the *Mesabolivar togatus* species group by

the anterior plate without the median lobe, thus forming a large, rectangular median area on the posterior border, twice as wide as long (Figs 12F-G).

Description. Male (**holotype**). Measurements. Total body length 4.6, carapace width 1.57. Distance PME-PME 0.15, diameter PME 0.13, distance PME-ALE 0.15, distance AME-AME 0.05, diameter AME 0.03. Sternum width/length: 1.12/0.76. Leg I: 53.24 (14.1 + 0.69 + 12.9 + 22.5 + 3.05), tibia II: 9.9, tibia III: 6, tibia 4: 9, tibia I L/d: 86. Femora I–IV width (at half length): 0.2, 0.28, 0.25, 0.18.

Color (in ethanol). Carapace of orange- ocher color, with a wide vertical greenish orange band that extends to the base of the ocular tubercle; legs of the same color as the prosoma; gray-orange abdomen with strong and abundant bluish dorsal and lateral spots; genital area the same color as the prosome.

Body. Ocular area raised; carapace with distinct median furrow; clypeus and sternum unmodified; unmodified sternum.

Chelicerae. As in Figs 12D-E, with two pairs of frontal processes, one large spiniform pair, in the proximal line, the other small oblique pair, near the midline.

Palps. Generally similar to *M. togatus* (and similar species) (Huber 2018: figs 158, 159); procurus distally wide, retrolateral apophysis curved (Figs 12A-C).

Legs. Without spines, without curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 3.3 %; tarsus 1 with ~55 pseudosegments, distally distinct.

Female (**paratype**) Similar to the male, but with a strongly bluish abdomen; Tibia I: 10.5; epigynum as in Figs 12G-F (see in the diagnosis); internal genitalia as in Fig. 12H, similar to *M. L17-080* and *M. buraquinho* (Figs 8E; Huber 2018: fig.185).

Natural history. All specimens were collected in regular Pholcidae webs, among large rocks and tree trunks, in the humid and forested enclaves in the uphill of the Serra do Barbado.

Distribution. Known only from the state of Bahia (Brazil).(Fig. 30)

Mesabolivar L17-089 **sp. n.**

Figs 13A-H; 14A-C

Type material. ♂ **Holotype.** BRAZIL, *Bahia*, Carinhanha, Gruna do Cocho cave, 13°36'55.6"S –43°46'11.7"W, 2-vi-2012, M.E. Bichuette & J.E. Gallão leg. (UFMG 20239). **Paratypes.** Same data as holotype, 1♀ (UFMG 20240), 1♂ (IBSP 171896).

Other material examined. BRAZIL, *Bahia*, Carinhanha, Gruna das Três Cobras cave, 13°37'6.3"S 43°45'9.1"W, 804 m a.s.l., 30-v-2012, 1♂ 2♀ (IBSP 171872, 171882, 171884).

Diagnosis. *M.* L17-089 is similar to *M. camacan* and *M.* L17-080 by the presence of two pairs of frontal apophyses in male chelicerae, with a distal, robust, strongly sclerotized, rounded cheliceral apophysis located near the inner border, and the a proximal cheliceral apophysis, pointed and coniform (Huber 2018: figs 172, 173). *M.* L17-089 can be distinguished from *M. camacan* by the distal cheliceral apophysis being anteriorly surrounded by a patch of light, weakly sclerotized area, by the longer distal cheliceral apophysis in frontal view, and by the closer proximity of both cheliceral apophyses (Figs 13E-F). The males of species can be further differentiated those of *M.* L17-080 by the more robust proximal cheliceral apophysis. Females can be differentiated from those of *M. camacan* and *M.* L17-080 by the arc-shaped pore plates, with a narrower anterior border, elongated posteriorly and with wider posterior lateral borders (Fig. 13H).

Description. Male (**holotype**). Measurements. Total body length 4.42, carapace width 1.83. Distance PME-PME 0.17, diameter PME 0.08, distance PME-ALE 0.13, distance AME-AME 0.03, diameter AME 0.03. Sternum width/length: 1.19/0.89. Leg 1: 70.55 (17.55 + 0.66 + 17.7 + 40.5 + 3.14), tibia II: 13.5, tibia III: 6.8, tibia IV: 11.25, tibia I L/d: 118. Femora I–IV width (at half length): 0.23, 0.31, 0.28, 0.23.

Color (in ethanol). Prosoma of uniform orange color, slightly darkened in the ocular area; legs dark orange, with a distal white band at their joints; dorsal abdomen and ventrally pale orange, being that in the genital area the color is a little more settled

Body. Habitus as in Figs 13A-B, rounded abdomen; slightly raised ocular area; carapace with medium groove, with a spindle-shaped opening L / d 2.3; clypeus and sternum hairs on its surface.

Chelicerae. With two pairs of frontal processes (Figs 13E-F), a rounded distal pair, near the midline, and the other pointed proximal pair, in lateral view (see diagnosis).

Palps. In general, similar to *M. camacan* (compare with Huber: Fig 174; 175); but tip of procurus slightly longer (Fig 14A-C). Coxa with retrolateral apophysis; trochanter barely modified; femur with retrolateral apophysis proximally, widened distally; tarsus with small dorsal process; procurus widely curved, with narrow retrolateral flap, flat and slightly prolonged prolateral apophysis, and membranous distal structures; bulb large and slightly sclerotized.

Legs. With few vertical hairs; retrolateral trichobothrium on tibia 1 at 2 %; tarsus 1 with ~ 45 pseudosegments, almost indistinguishable distally.

Female (**paratype UFMG 20240**). Similar to the male, but with a slightly darker coloration (Figs C-D); epigynum as in Fig. 13G (See in the diagnosis); internal genitalia as in Fig. 13H, with pair of pore-plates in tent-shaped lateral position, converging anteriorly, posteriorly slightly flared and flat.

Distribution. Known only from the Brazilian state of Bahia (Fig. 30).

Mesabolivar L17-097 **sp. n.**

Figs 15A-E

Type material. ♂ **Holotype**, BRAZIL: *Bahia*: Una, Povoado do Quati, 15°6'21.6"S–39°20'40.6"W, 232 m a.s.l., 31-xii-2014, A. Anker, E.A. Araujo & P.H. Martins leg. (UFMG 17759)

Diagnosis. *M.* L17-097 can be distinguished from other species of the genus by the male chelicerae with two pairs of frontal apophyses, a spiniform proximal and a rounded distal one with strongly sclerotized distal circumference (Figs 15D-E) and by the procurus shape, strongly widened from the medial part to more or less the distal part, the prolateral process is short and flat (Figs 15A-B).

Description. Male (**holotype**). Measurements. Total body length 3.14, carapace width 1.35. Distance PME-PME 0.13, diameter PME 0.13, distance PME-ALE 0.13, distance AME-AME 0.03, diameter AME 0.03. Sternum width/length: 0.92/0.69.

Color. Dark orange in color, slightly darker towards the center, thoracic groove with a small horizontal band darker than the rest of the dorsal surface; light orange abdomen with dark gray internal spots; genital area dark orange.

Body. Raised ocular area, carapace with median groove; sternum with hairs on the circumference.

Chelicerae. As in Figs 15D-E, with two pairs of apophyses, one small distal, strongly sclerotized and rounded and the other proximal spiniform distally inclined (see diagnosis).

Palps. As in Figs 15A-C; coxa with punctate retrolateral apophysis with small hairs around it; femur with retrolateral apophysis proximally, widened distally; dorsal hairy tarsus; procurus with a prolateral widened keel, extending from medial to tip; the processes at the tip of the procurus are poorly projected and slightly membranous.

Female. Unknown

Natural history. The male specimen was collected in a secondary Atlantic forest.

Distribution. Known only from the Brazilian state of Bahia (Fig. 29).

Mesabolivar L17-099 **sp. n.**

Figs 24A-H

Type material. ♂ **Holotype**, BRAZIL: *Bahia*: Bonito, Gruta do Cristal cave, 11°49'11.7"S–41°18'45.1"W, 918 m.a.s.l., 4-ix-2015, L. S. Carvalho leg., (UFMG 22012). **Paratypes.** Same data as holotype, 1♂ (UFMG 22013), 1♂ 2♀ (CHNUFPI 3662). Morro do Chapéu, near Buraco do Possidônio, 11°38'50.4"S–41°16'9.9"W, 978 m.a.s.l., 5-ix-2015, A. Vasconcellos leg., 1♀ (UFMG 22014).

Diagnosis. *M.* L17-099 is very similar to *M.* L17-209 and *M. similis* by the shape and position of the male cheliceral apophyses (Fig. 16D; Huber 2018: fig. 172). Males of *M.* L17-099 can be distinguished from those of *M.* L17-209 by the more frontally projected cheliceral apophyses and the less developed proximal apophysis (Fig. 24H). They can be differentiated from those of *M. similis* by the pointed and less developed proximal apophysis; by the cheliceral apophyses slightly less projected in lateral view (Fig. 24G).

Females are similar to those *M. togatus* species group by the shape of the epigynum, but it differs from congeners by the notably wider than long median lobe and by the pore plates with lateral projections on the posterior border (Figs 24D-F).

Description. Male (**holotype**). Measurements. Total body length 4.35, carapace width 1.53. Distance PME-PME 0.13, diameter PME 0.13, distance PME-ALE 0.18, distance AME-AME 0.02, diameter AME 0.03. Sternum width/length: 0.97/0.71.

Color. Carapace ocher-orange, with a large dark band; bluish abdomen with a lighter dorsal band, ocher-orange genital area.

Body. Raised ocular area; carapace with medium groove; unmodified clypeus; unmodified sternum.

Chelicerae. As in Figs 24G-H; with two pairs of distinctive frontal apophyses (see diagnosis).

Palps. Generally similar to *M. similis*, however strongly curved, and with a larger prolateral apophysis than in *M. similis* (Figs 24A-C).

Female (**paratype UFMG 22014**). Almost indistinguishable epigynum of *M. similis* and *M. L17-209* (compare Figs 24D, F 16F, H with Huber 2018: Fig 170, 194); internal genitalia with pair of pore-plates in vertical lateral position, parallel, noticeably widened posteriorly; anteriorly united, forming a more or less straight horizontal line, posteriorly separated almost the same distance as the anterior straight union (Fig. 24E)

Natural history. The specimens were collected on large spaces between rocks, in hypogean environment, in twilight zone; and among tree trunks and bromeliads in epigeal environments.

Distribution. Known only from the Brazilian state of Bahia (Fig. 32).

Mesabolivar L17-209 **sp. n.**

Figs 16A-H

Type material. ♂ **Holotype**, BRAZIL: *Minas Gerais*: Leme do Prado, Estação Ecológica de Acauã, Sede Estação 17°7'56.22"S–42°46'7.98"W, 795 m.a.s.l., 19 to 28-ii-2013.

P.H. Martins leg., (UFMG 18798). **Paratypes.** Estação Ecológica de Acauã, Poção, 17°7'56.22"S–42°46'7.98"W, 795 m.a.s.l., 19 to 28-ii-2013. P.H. Martins leg., 1♀ (UFMG 20004). Estação Ecológica de Acauã, 17°7'56.5''S–42°43'58.9''W, 887, 19 to 28-ii-2013. P.H. Martins leg., 3♂ (UFMG 21577); same data as above, 6♂ 6♀ (UFMG 21578).

Other material examined. BRAZIL: *Minas Gerais*: Leme do Prado, Estação Ecológica de Acauã, 17°9'2.2"S–42°46'14.5"W, 856 m.a.s.l., 28-ii-2013. P.H. Martins leg., 1♂ 2♀ (UFMG 21579). Turmalina, Caatinga Redonda, 17°6'59.7"S - 42°52'33.9"W, 649 m.a.s.l., 28-iii-2013, P.H. Martins leg., 1♂ (UFMG 21580).

Diagnosis. *M. L17-209* is very similar to *M. L17-099* and *M. similis* (see diagnosis of *M. L17-099*) in the shape of genital structures and male chelicerae apophyses. The males of *M. L17-209* can be distinguished from those of *M. L17-099* by the less frontally projected cheliceral apophyses and the more developed proximal apophysis (Figs 16D-E). They can be differentiated from those of *M. similis* the cheliceral apophyses slightly less projected in lateral view (compare, Fig. 16D; Huber 2018: fig. 166). Females are similar to those *M. togatus* species group by the shape of the epigynum, but it differs from congeners by the notably narrower median lobe, and by the pore plates with a S-shaped, as wide posteriorly as anteriorly (Fig. 16G)

Description. Male (**holotype**). Measurements. Total body length 4.88, carapace width 1.83. Distance PME-PME 0.1, diameter PME 0.1, distance PME-ALE 0.15, distance AME-AME 0.03, diameter AME 0.03. Sternum width/length: 1.02/0.74.

Color. (In ethanol) dark orange carapace, with a dark brown oval spot; light orange abdomen with bluish dorsal spots; genital area orange dark orange

Body. Slightly raised ocular area; carapace with medium groove and spines on the edges; clypeus and sternum unmodified.

Chelicerae. As in Fig.16D-E, two pairs of frontal processes (see diagnosis), similar to those present in *M. similis*, *M. L17-099*, *M. L17-104*.

Palps. As in Figs. 16A-C; generally similar to *M. similis*, with slight variations in the thickness and size of the prolateral process and in the dorsal membranous flap.

Female (**paratype UFMG 20004**). Similar to the male; almost indistinguishable epigynum of *M. similis* and *M. L17.099* (compare Figs 16F, H; 24D, F; Huber 2018: fig 170, 194), however, in *M. L17-209* the medial lobe is narrower (see diagnosis); internal genitalia with a pair of long and wide upright lateral pore plates, notably curved, reminiscent of an S (Fig. 16G).

Distribution. Known only from the Brazilian state of Minas Gerais (Fig. 32).

Mesabolivar L17-208 **sp.n**

Figs 17A-H; 18A-C

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Santana do Riacho, Parque Nacional da Serra do Cipó, Caverna da Bocaina V cave, 19°20'4"S-43°36'11"W, 18-ii-2020, R.A Torres leg. (UFMG 24676). **Paratypes**, Same data as holotype, 3♂ 5♀ (UFMG 24609, 24675, 24677, 24679, 24680);

Other material examined. BRAZIL: *Minas Gerais*: Itacarambi, Distrito de Fabião II, 15°10'19"S-44°10'49"W, 7-v-2012, G.F.B. Pereira *et al.* leg., 1♀ (UFMG 13396). Morro do Pilar, Fazenda Vilela, 19°9'46,62 - 43°21'52,08"W, 605 m a.s.l., 20-vii-2012, P.H. Martins *et al.* leg., 1♀ (UFMG 13379). Santana do Riacho, Parque Nacional da Serra do Cipó, 19°20'57"S-43°37'10,16"W, 822 m a.s.l., 21-vii-2002, 3♂ 2♀ (UFMG 1844, 6315). Cardeal Mota, Serra do Cipó, 19°20'15,84"S-43°38'18,72"W 805 m a.s.l., 17-vii-2012, 1♂ 1♀ (UFMG 12580, 12600). Caverna da Bocaina V cave, 19°20'4"S-43°36'11"W, 18-ii-2020, R.A Torres leg., 8♂ 15♀ 7 juvs. (UFMG 24355, 24356, 24359-24361, 24365-24370, 24608, 24685-24690); Cave da Viola cave, 19°17'44"S - 43°36'59"W, 17-ii-2020, R.A Torres leg., 5♀ 3 juv. (UFMG 24354, 24357, 24358, 24363, 24369, 24607, 24611); Lapa do Gentil cave, 19°16'49"S - 43°37'52"W, 19-ii-2020, R.A Torres leg., 2♂ 2♀ 3 juvs. (UFMG 24352, 24353, 24606, 24362, 24364).

Diagnosis. *M. L17-208* can be easily identified by the presence of two pairs of proximal cheliceral apophyses, the most distal one is more developed, coniform, frontally directed, and located closer to the inner border to the most proximal pair. The most proximal cheliceral apophysis is closer to the clypeus border and coniform but very reduced and barely visible laterally (Fig. 17D). Females can be recognized by the anterior plate of the

epigynum semioval, with a median pocket much wider than long; and by the median lobe of the posterior border with a circular depression (Fig. 17G). In posterior view, the anterior plate has a slight medial concave surface (Fig. 17H).

Description. Male (holotype). Measurements. Total body length 3.8, carapace width 1.3. Distance PME-PME 0.1, diameter PME 0.11, distance PME-ALE 0.15, distance AME-AME 0.17, diameter AME 0.05. Sternum width/length: 1.02 / 0.56. Leg I: 39.5 (11.7 + 0.58 + 11.85 + 12.9 + 2.47) tibia II: 8.85, tibia III: 5.1, tibia IV: 7.95, tibia I L/d: 91. Femora I–IV width (at half length): 0.18, 0.2, 0.23, 0.18.

Color. Carapace orange, with a black dorsal stripe that includes the ocular area; orange sternum; dark orange legs; abdomen with bluish internal spots laterally; orange genital area.

Body. Habitus as in Figs. 17A-B, ocular area raised, with a small joroda at the proximal base; carapace with a medium groove with a rectangular band (much longer than wide) of black color.

Chelicerae. With two pairs of frontal apophyses, the first cuneiform and located in the basal part of the second, which is much larger (three times larger) and inclined distally (Figs. 17D-E).

Palps. As in Figs. 18A-C, small procurus in relation to the length of the body; barely perceptible trochanter; coxa V-shaped in ventral view; femur with a retrolateral apophysis with long hair at the apex; procurus more or less straight from middle to tip, where it is strongly curved; partially sclerotic bolbal process.

Legs. With few vertical, dark orange hairs, femurs with warm white distal rings with the same proximal rings; retrolateral trichobothrium on tibia 1 at 1.5%; prolateral trichobothrium present on tibia 1; tarsus 1 with ~ 45 pseudosegments, distally distinct.

Female (paratype UFMG 24677). In general, similar to male (Fig. 17C). Tibia I: 9. Epigynum as in Fig. 17G (see diagnosis); internal genitalia as in Fig. 17F, with pair of large pore-plates in vertical lateral position, more or less parallel, in the part anteriorly they are unit and slightly more hooked posteriorly.

Variation. Four females with dark rings on the distal part of the tibia and with the larger Tibias I, up to 9.5.

Natural history. The specimens inhabit hypogean, usually close to the ground, and epigeal ecosystems can also be found in low vegetation

Distribution. Known only from the Brazilian state of Minas Gerais (Fig. 32).

Mesabolivar R20-015 **sp. n.**

Figs 19A-K

Type material. Holotype. BRAZIL: *Minas Gerais*: Lagoa Santa, Parque Estadual do Sumidouro, Gruta Pequeno Sumidouro cave, 19°24'8.36"S - 43°57'10.96"W, 15-xii-2020, R.A. Torres leg. (UFMG 24683). **Paratypes.** Same data as holotype, 1♀ (UFMG 24684). Lapa do Sumidouro cave, 19°32'31.67"S-43°56'29.9"W, 15-xii-2020, R.A. Torres leg., 1♂, 1♀ (UFMG 24675, 24676); Gruta Tuneis cave, 19°33'38.52"S-43°57'33.84"W, 14-xii-2020, R.A. Torres leg., 1♀ (UFMG 24647).

Other material examined. BRAZIL: *Minas Gerais*, Lagoa Santa, Parque Estadual do Sumidouro, Gruta Lapinha cave, 19°33'49"S-43°57'35.46"W, 14-xii-2020, R.A. Torres leg., 4♂ 10♀ 8 juvs. (UFMG 24522-24535, 24651); Lapa do Sumidouro cave, 19°32'31.67"S-43°56'29.9"W, 15-xii-2020, R.A. Torres leg., 4♂ 6♀ (UFMG 24549-24557, 24677). Gruta Pequeno Sumidouro cave, 19°24'8.36"S-43°57'10.96"W, 15-xii-2020, R.A. Torres leg., 2♂ 18♀ 6 juvs. (UFMG 24648-24650, 24652, 24558-24564). Gruta Tuneis cave, 19°33'38.52"S-43°57'33.84"W, 14-xii-2020, R.A. Torres leg., 14♂ 14♀ 3 juvs. (UFMG 24536-24548, 24653-24658, 24565- 24571).

Diagnosis. *Mesabolivar* R20-015 can be easily differentiated from other species of the genus by the male chelicerae with two pairs of frontal apophyses, the proximal one horn-shaped, strongly frontally directed, bent apically and with a sclerotized tip. The most distal one is positioned close to the midline, is oblique, keel-like and strongly sclerotized (Figs 19E-G). Females can be recognized by the anterior plate of the epigynum with a median depression forming a canal, in ventral and posterior views (Figs 19I, K), and the posterior border with two diagonally-oriented oval humps, which have a semicircular sclerotized spot posteriorly.

Description. Male (**holotype**). Measurements. Total body length 4.65, carapace width 1.65. Distance PME-PME 0.15, diameter PME 0.13, distance PME-ALE 0.1, distance

AME-AME 0.03, diameter AME 0.03. Sternum width/length: 1.4/0.77. Leg I: 60.53 (16.2 + 0.58 + 15.6 + 24.9 + 6.75), tibia II: 10.5, tibia III: 6.6, tibia IV: 9.75, tibia I L/d: 86. Femora I–IV width (at half length): 0.23, 0.31, 0.25, 0.25.

Color. Prosoma ocher-yellow, with a triangular greenish-yellow band (widening proximally) in the thoracic groove; ocher yellow legs darker than the prosoma, with whitish rings in their distal parts of the femur and the tibia; bluish abdomen with darker circular spots; ocher yellow genital area darker than the prosoma and legs.

Body. Habitus as in Figs 19A-B, ocular area slightly elevated, in lateral view the coxa one partially covers the anterior eyes; carapace with medium groove; sternum with hairs along its surface.

Chelicerae. As in Figs 19F-G, with abundant hairs on its surface, with two frontal apophyses (see diagnosis), both visible in a lateral position.

Palps. As in Figs 19C-E; coxa with a retrolateral process and thick hairs on the surface; trochanter with small distal process; femur with rounded retrolateral apophyse; procurus curved along its entire length, the tip rhomboid-shaped, with its processes almost the same size.

Legs. Light brown in color, with few vertical hairs; retrolateral trichobothrium on tibia 1 at 2.5 %; tarsus 1 with ~45 pseudosegments, distally distinct.

Female (paratype UFMG 24684). Notably smaller than the male, more opaque in color and with a rounded abdomen. Tibia I: 12.45. Epigynum as in Figs 19H-I, K (see diagnosis); internal genitalia as in Fig. 19J, with a pair of large pore-plates in a lateral position in the form of a tent, converging anteriorly, posteriorly strongly widened and recollecting anteriorly.

Variation. Two males with femur 3 the same width as the other femurs (0.23)

Natural history. The species are commonly found at cave entrances, usually aggregated. We have also found it outside caves, in lower strata among rocks and decaying logs.

Distribution. Known only from the Brazilian state of Minas Gerais (Fig. 28).

Mesabolivar R20-008 **sp. n.**

Figs 20A-G

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Itabirito, Parque Nacional da Serra do Gandarela, Caverna CAP2_016 cave, 20°8'59.2''S–43°39'23.9''W, 1448 m.a.s.l., 26-iii-2020, B.T. Faleiro & R.A. Torres leg. (UFMG 24692). **Paratypes.** Same data as holotype, 1♂ 2♀ (UFMG 24691, 24696).

Other material examined. BRAZIL: *Minas Gerais*: Itabirito, Parque Nacional Serra do Gandarela, Caverna CAP2_012 cave, 20°8'59.8''S–43°39'24.5''W, 1458 m.a.s.l., 26-iii-2020, B.T. Faleiro & R.A. Torres leg., 1♀ (UFMG 24641); Caverna CAP2_013 cave, 20°8'59.8''S–43°39'24.5''W, 1459 m.a.s.l., 27-iii-2020, B.T. Faleiro & R.A. Torres leg., 1♀ (UFMG 24642); Caverna CAP2_014 cave, 20°8'59.8''S–43°39'24.5''W, 1461 m.a.s.l., 29-iii-2023, B.T. Faleiro & R.A. Torres leg., 1♂ (UFMG 24643); Caverna CAP2_015 cave, 20°8'59.8''S–43°39'24.5''W, 1461 m.a.s.l., 29-iii-2023, B.T. Faleiro & R.A. Torres leg., 1 juv (UFMG 24644); Caverna CAP2_016 cave, 20°8'59.2''S–43°39'23.9''W, 1448 m.a.s.l., 26-iii-2020, B.T. Faleiro & R.A. Torres leg., 1♂ 12♀ 3 juvs. (UFMG 24438, 24439-24445, 24448, 24635-24640, 24712, 24713).

Diagnosis. *Mesabolivar R20-008* can be easily differentiated from other species of the genus by the male chelicerae with a single pair of frontally projected apophyses near the midline (Figs 20D-E). The procurus has a thin, projected prolateral process (Fig. 20A), Females can be recognized by the anterior epigynal plate oval, with the posterior border with a sclerotized middle lobe, which is almost rectangular and has a small median pocket (Fig. 20F).

Description. Male (**holotype**). Measurements. Total body length 3.41, carapace width 1.19. Distance PME-PME 0.15, diameter PME 0.13, distance PME-ALE 0.15, distance AME-AME 0.03, diameter AME 0.08. Sternum width/length: 1.19/0.69. Leg I: 66.16 (15.6 + 0.76 + 15.6 + 30 + 4.2), tibia II: 10.65, tibia III: 6.15, tibia IV: 10.05., tibia I L/d: 86.6. In all femurs width (at half length): 0.25.

Color. Carapace of orange color, with an oval band much longer than wide of dark brown color; legs brown with femur and tibia with white distal rings, femur 4 with white proximal rings; abdomen with bluish dorsal and lateral spots; sternum and genital area of ocher-orange color.

Body. Ocular tubercle raised; carapace with median groove; clypeus unmodified.

Chelicerae. As in Figs 20D-E, with a pair of apophysis, located near the midline, with a curved tip and well exposed in lateral view.

Palps. As in Figs 20A-C; coxa with a squared retrolateral process; trochanter barely modified; femur long, with retrolateral process proximal, widened distally; procurus curved in its median part, distally with a well projected and thin prolateral apophyses; bulb slightly sclerotized.

Leg. Without spines, without curved hairs, whit vertical hairs; retrolateral trichobothrium on tibia 1 at 2.5%; tarsus 1 with >50 pseudosegments, distally fairly distinct.

Female (**paratype UFMG 24691**). Similar to the male; epigynum as in Fig. 20F; (see diagnosis); internal genitalia as in Fig. 20G, with a pair of laterally positioned large pore plates in an inverted U-shape, formerly unitized by oval-shaped sclera.

Variation. A male with widened femur 2, (0.38); in a female the size of the tibia 1: 15, slightly larger.

Distribution. Known only from the Brazilian state of Minas Gerais (Fig.28).

Natural history. The species was found inhabiting caves, mainly in the twilight zone.

Mesabolivar R20-003 **sp. n.**

Figs 21A-H; 22A-C

Type material. ♂ **Holotype.** BRAZIL: *Minas Gerais*: Itacarambi, Parque Nacional Cavernas do Peruaçu, visitor center, 15°9'22.6"S–44°13'51.5"W, 512 m a.s.l., 9-iv-2020, A.J. Santos et al. leg. (UFMG 24685). **Paratypes.** Same data as holotype, 3♂ 3♀ (UFMG 24683, 24684, 24388, 24390, 24694, 24704). Same region as holotype, nearby the Lapa do Cipó cave, 15°3'19.9"S–44°10'54.7"W, 774 m a.s.l., 9-iv-2020, A.J. Santos et al. leg., 1♂ 2♀ (UFMG 24381–24383). Same region as holotype, nearby the Gruta Olhos D'Água cave, 15°6'47.6"S–44°10'9.4"W, 527, 4-iii-2020, A.J. Santos et al. leg., 2♀ (UFMG 24687).

Diagnosis. *Mesabolivar* R20-003 can be distinguished from its congeners by the male chelicerae with two pairs of frontal apophyses, a distal oblique pair, which are much

longer than wide, and a proximal larger and spine-shaped pair, with the tip projected distally (Figs 21 CD). Additionally, the shape of the procurus is similar to *M. togatus* and *M. similis*, but differs by being strongly curved, with slightly different prolateral apophyses and membranous dorsal flaps (compare Fig. 22A-B, Huber 2018: figs 159, 167, 168). Females are similar to those *M. togatus* species group by the shape of the epigynum, however *M. R20-003* has the lobes of the posterior margin with clear differences in their shape (Fig. 21H); the internal genitalia is has the pair of pore-plates positioned vertically, more or less parallel, and anteriorly connected, forming a horizontal straight line (Fig. 21G).

Description. Male (holotype). Measurements. Total body length 4.06, carapace width 1.43. Distance PME-PME 0.15, diameter PME 0.14, distance PME-ALE 0.17, distance AME-AME 0.17, diameter AME 0.15. Sternum width/length: 1.04 / 0.62. Leg I: 39.96 (13.35 + 0.51 + 13.8 + 10.6 + 1.7) tibia II: 10.2, tibia IV: 5.48, tibia I L/d: 92. Femora I–IV width (at half length): 0.24, 0.28, 0.28.

Color. Carapace light orange, with large brown median mark including ocular area; orange sternum; legs brown, with light or dark distal and basal rings; greenish-gray abdomen, with bluish-gray internal spots dorsally and laterally; orange-colored genital area.

Body. Habitus as in Figs 21A-B, ocular area raised; carapace with median furrow; clypeus and sternum unmodified.

Chelicerae. As in Figs 21C-D, with two pairs of frontal apophyses as in *M. togatus* or *M. baianus*, a distally oblique pair, much longer than wide and slightly visible in side view, a proximally spinous pair, with the tip projecting distally.

Palps. As in Figs. 22A-C, in general, as in *M. togatus* (cf. Huber 2000: figs 855–856) and *M. baianus* (cf. Huber 2018: figs 160–161); the palps of these species may be indistinguishable, but the membranous dorsal flap of the procurus shows a slight distinction between the three species.

Legs. Without spines, with few vertical hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 2.0 %; tarsus 1 with >45 pseudosegments, distally distinct.

Female (**paratype UFMG 24683**). In general, similar to male (Figs 21E-F). Tibia 1: 11.1. Epigynum as in Figs 21H, very similar to *M. togatus* and *M. similis*, slightly distinguishable in shape. Internal genitalia as in Fig. 21G (see diagnosis).

Natural history. The species can be found in the understory and low vegetation (Figs 25A-B)

Distribution. Known from the Parque Nacional Cavernas do Peruaçu, at the northern state of Minas Gerais (Brazil) (Fig. 28).

Mesabolivar L17-104 **sp. n.**

Figs 23A-G

Type material. ♂ **Holotype**, BRAZIL: *Bahia*: Iraquara, Gruta da Lapa Doce, 12°20'2.6"S-41°36'15.1"W, 18-i-2012, I.L.F. Magalhães *et al.* leg. (UFMG 22063).

Paratype. Same data as holotype, 1♂ 1♀ (UFMG 21961, CHNUFPI 3472).

Diagnosis. *Mesabolivar* L17-104 can be easily differentiated from its congeners by the the arrangement and size of the propaternal apophyses at the tip of the procurus, and the short membranous dorsal flap (Figs 23A-C). The male chelicerae have two pairs of frontal apophyses, a middle oblique pair and a proximal conic, as in *M. L17-099*, *M. L17-209* and *M. similis*. However, *M. L17-104* has slightly less projected cheliceral apophyses, in lateral view (compare Figs 16D; 23D; 24G, Huber 2018: fig. 166). Females can be recognized by the anterior plate of the epigynum divided at the posterior border in three lobes, by two white lateral membranous lobes, forming a sclerotized rectangular middle lobe(Fig. 23F)

Description. Male (**holotype**). Measurements. Total body length 3.5, carapace width 1.78. Distance PME-PME 0.2, diameter PME 0.15, distance PME-ALE 0.15, distance AME-AME 0.02, diameter AME 0.03. Sternum width/length: 1.06/0.69.

Color. Carapace ocher-orange, with a dark brown band; light orange abdomen with bluish dorsal spots; ocher orange genital area.

Body. Ocular area slightly raised; carapace with median furrow; clypeus and sternum unmodified.

Chelicerae. As in Fig. 23D-E, two pairs of frontal apophyses (see diagnosis)

Palps. As in Figs 23A-C; coxa with retrolateral apophysis; barely modified trochanter; femur with a retrolateral and a distal apophysis; tarsus with hairy and granulated dorsal surface; procurus strongly curved in its middle part, distally with a membranous; genital bulb with great short apophysis, strongly curved, slightly sclerotized.

Female (**paratype**). Twice smaller than the male and more opaque in color. Epigynum as in Fig. 23F (see diagnosis); internal genitalia as in Fig. 23G, similar to *M.* R20-003, but in *M.* L17-104 the pore-plates are notably wider and the spacing between them is narrower.

Distribution. Known only from the Brazilian state of Bahia (Fig. 32).

New records

Mesabolivar baianus Huber, 2018

Material examined. BRAZIL: *Bahia*: Una, Estação Experimental Lemos Maia (CEPLAC), 15°16'22.5''S-39°5'31.9''W, 80 m.a.s.l., 7 to 12-xii-2010, G.H.F. Azevedo & A.J. Santos alg., 1♂ 1♀ (UFMG 11279, 11280).

Diagnosis. See in Huber (2018a: 43-44)

Distribution. Known from the state of the Brazilian states of Bahia and Minas Gerais. (Fig. 28).

Mesabolivar botocudo Huber, 2000

Material examined. BRAZIL: *Minas Gerais*, Nova Lima, RPPN Mata Samuel de Paula, 20°0'0''S-43°52'0''W, 14-x-200, J.P.P. Pena-Barbosa et al. leg., 1♂ 2♀ (UFMG 1319). Rio Acima, Vargem Grande, Cave VG-19 cave, 20°7'53''S-43°54'16''W, 2 to 10-viii-2011, R. Andrade & I. Cizauskas et al. leg., 1♀ (IBSP 179349); Barão de Cocais, Mina

de Gongo Soco, Gruta Córrego Vieira cave, 19°57'35.62'' S-43°35'56.81''W, 02 to 24-xi-2007, R. Andrade & I. Cizauskas et al. leg., 1♂ 1♀ (IBSP 127625).

Diagnosis. See in Huber (2000: 223-225)

Distribution. Minas Gerais state, Brazil (Fig. 29).

Mesabolivar cyaneomaculatus (Keyserling, 1891)

Material examined. BRAZIL: *Minas Gerais*: Caeté, Gruta da Piedade cave, 19°49'6''S–43°40'34.4''W, 1454 m.a.s.l., 15-xii-2012, L. Emerich et al. leg., 1♂ 1♀ (UFMG 20219, IBSP 171864). Alto Caparaó, Parque Nacional do Caparaó, Vale Verde, 20°25'5.9''S–41°50'48.7''W, 1333 m.a.s.l., 25-xi-2014, L.S. Carvalho & B.T. Faleiro leg., 1♂ (UFMG 19438). 20°25'5.9''S–41°50'48.7''W, 1333 m.a.s.l., 25-xi-2014, L.S. Carvalho & B.T. Faleiro leg., 1♀ (CHNUFPI 3520). 20°25'5.9''S–41°50'48.7''W, 1333 m.a.s.l., 25-xi-2014, L.S. Carvalho & B.T. Faleiro leg., 1♂ (CHNUFPI 3616). Caeté, Gruta do Chuveirinho cave, 19°49'0.7''S-43°40'42.2''W, 1409 m.a.s.l., 25-iii-2012, M.E. Bichuette *et al.* leg., 1♀ (IBSP 171866); 19°49'0.7''S–43°40'42.2''W, 1409 m.a.s.l., 25-iii-2012, M.E. Bichuette *et al.* leg., 1♂ (UFMG 20263). Ouro Preto, Floresta Estadual Uaimii, 20°17'47.7''S–43°34'28.9''W, 1012 m.a.s.l., 2-xii-2012, P.H. Martins lag., 1♂ (UFMG 13097). Santa Rita do Ibitipoca, Parque Estadual do Ibitipoca Near the entrance of the Gruta do Fugitivo cave, 21°40'38.29''S-43°52'56.99''W, 1660 m a.s.l., 8-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 1♀ (UFMG 24722; UFMG 24723); Gruta do Fugitivo cave, 21°40'38.29''S-43°52'56.99''W, 1660 m.a.s.l., 8-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 3♀ (UFMG 24465, UFMG 24518, UFMG 24519); Gruta dos Moreiras cave, 21°40'35.74''S–43°52'56.68''W, 1651 m a.s.l., 8-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 2♂ 2♀, 3 juvs (UFMG 24671, UFMG 24477, UFMG 24478, UFMG 24479, UFMG 24480); near the entrance of the Gruta dos Moreiras cave, 21°40'35.74''S–43°52'56.68''W, 1651 m a.s.l., 8-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 1♀ (UFMG 24500, UFMG 24501). Lima Duarte, Parque Estadual do Ibitipoca, Gruta do Monjolinho cave, 21°41'47.72''S–43°52'48.5''W, 1482 m a.s.l., 6-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg 2♂ 3♀ (UFMG 24459, UFMG 24460, UFMG 24461, UFMG 24462 UFMG 24463); near the entrance of the Gruta do Monjolinho cave, 21°41'47.72''S–43°52'48.5''W, 1482 m

a.s.l., 6-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 2♀ (UFMG 24470, UFMG 24471, UFMG 24509); Gruta da Cruz cave, 21°41'41.72"S–43°53'46.5' W, 1676 m a.s.l., 8-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 2♂ 1♀ 1 juvenil (UFMG 24464, UFMG 24495, UFMG 24496); near the entrance of the Gruta dos Viajantes cave, 21°42'16.73"S–43° 52'34.5"W, 1581 m a.s.l., 6-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 3 juveniles (UFMG 24466, UFMG 24467); near the entrance of the Gruta do Pião cave, 21°42'7.34"S–43°52'20.29"W, 1633 m.a.s.l., 6-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 2♀ 3 juvs, (UFMG 24468, UFMG 24469, UFMG 24520, UFMG 24521); Gruta das Casas cave, 21°42'1.72"S–43°53'1.5"W 1477 m a.s.l., 5-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 3♀ 3 juvs (UFMG 24472, UFMG 24473, UFMG 24474, UFMG 24475, UFMG 24476); Gruta das Bromélias cave, 21°42'33.86"S–43° 53'58.91"W, 1451 m a.s.l., 9-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 7♂ 16♀ 1 juv (UFMG 24481-UFMG 24494, UFMG 24502 - UFMG 24508, UFMG 24514-UFMG 24517); near the entrance of the Gruta dos Coelho cave, 21°42'34.73"S–43°53'45.5"W, 1370 m a.s.l., 5-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 3♀ 2 juvs (UFMG 24497, UFMG 24498, UFMG 24499, UFMG 24510, UFMG 24513); Gruta dos Coelho cave, 21°42'34.73"S–43°53'45.5"W, 1370 m a.s.l., 5-xii-2020, R.A. Torres, B.T. Faleiro & L.S. Carvalho leg., 1♂ 1♀ (UFMG 24511, UFMG 24512); Gruta dos Viajantes cave, 21°42'16.73"S–43°52'34.5"W, 1581 m.a.s.l., 6-xii-2020, 1♀ (UFMG 24506). Rio Acima, Caverna GAND-06 cave, 20°6'46.8"S–43°39'54.6"W, 1501 m.a.s.l., 27-iii-2020, 7♂ 4♀ (UFMG 24428, UFMG 24429, UFMG 24430, UFMG 24431, UFMG 24432, UFMG 24433, UFMG 24434, UFMG 24435, UFMG 24436, UFMG 24437, UFMG 24447); Caverna GAND-18 cave, 20°5'18.7"S–43°41'35.4"W, 1431m.a.s.l., 24-iii-2020, R.A. Torres & B.T. Faleiro leg., 1♀ (UFMG 24446)

São Paulo: Arapeí, Gruta Capitã cave, 22°41'41.4"S–44°28'2.2"W, 23-ii-2013, Equipe Laboratório de Estudos Subterrâneos leg., 1♀ (IBSP 171912).

& A.J. Santos alg., 1♂ 1♀ (UFMG 11279, 11280).

Diagnosis. See in Huber (2018a: 59-61).

Distribution. Widely distributed in the Brazilian states of São Paulo, Rio de Janeiro and Minas Gerais.

Mesabolivar buraquinho Huber, 2018

Material examined. BRAZIL: *Pernambuco*: Bonito, proximity to PE 103, 8°30'39.3"S–35°43'19.5"W, 787 m.a.s.l., 25-v-2015, L.S. Carvalho leg., 1 ♀ (UFMG 24703, 22004, 15589). Tamandaré, Reserva Biológica de Saltinho, 8°43'36"S–35°10'40.3"W 74 m.a.s.l., 26-v-2015, L.S. Carvalho leg., 2♂, 1♀ (UFMG 21756, UFMG 21757, UFMG 21758, CHNUFPI 3577).

Paraíba: João Pessoa, Jardim Botânico Benjamin Maranhão, "Mata do Buraquinho", 7°8'18"S–34°51'34.1"W, 2-vi-2015, L.S. Carvalho leg., 1♀ (UFMG 24351); same region as above, 7°8'18.6"S–34°51'27.72"W, 2-vi-2015, B.A. Huber, L.S. Carvalho leg., 1♂, 1♀ (UFMG 21510) (UFMG 21511). Campus of the Federal University of Paraíba, Mata do Biotério, 7°8'18.7"S–34°50'37"W, 8-ix-2013, L.S. Carvalho & A. Vasconcellosleg., 2♂ (CHNUFPI 3515). Rio Tinto, Reserva Biológica de Guaribas, SEMA3, 6°48'33.8"S – 35°5' 11.9"W, 24 m.a.s.l., 3-vi-2015, L.S. Carvalho leg., 9♂ 10♀ (UFMG 22008, 22006, 22009, CHNUFPI 3456).

Bahia: Elísio Medrado, Proximidades da antena, estrada Pioneira, Serra da Jibóia, 12°52'15''–39°28''52''W, 800, 9-xi-2010, L.S. Carvalho leg., 2♀ (CHNUFPI 1133, 1135).

& A.J. Santos alg., 1♂ 1♀ (UFMG 11279, 11280).

Diagnosis. See in Huber (2018a: 48-50)

Distribution. Widespread from Bahia state to Paraíba state, Brazil(Fig. 29).

Mesabolivar similis Huber, 2018

Material examined. BRAZIL: *Bahia*, Maracás, near headquarters Ferbasa, 13°28'15.9"S-40°26'16.7''W, 954 m.a.s.l., 11 to 13-iii-2012, E. S Araújo & A. Medeiros leg., 2♂ 1♀ (CHNUFPI 0278); Boa Vista do Tupim, Fazenda Morro de Pedra, 12°31'41.88''S-40°36'15.12''W, 14-v-2015, B.A. Huber, L.S. Carvalho leg., 1♂ (UFMG 21509).

Diagnosis. See in Huber (2018a: 44-46)

Distribution. Bahia state, Brazil (Fig. 29).

Mesabolivar togatus (Keyserling, 1891)

Material examined. BRAZIL: *Rio de Janeiro*, Rio de Janeiro, Parque Nacional da Tijuca, 22°57'6.81''S-43°26'32.4''W, 563 m.a.s.l., ii-2004, E.S.S. Álvares leg., 1♂ 5♀ (UFMG 1756). Miracema, Fazenda Sergio Potta de Castro, 21.413°S-42.196°, 2♂ (BMNH 1890.7.1.8328). Miguel Pereira, Distrito de Vera Cruz, 22°30'56.4'S-43°25'42.2''W, 8-iii-2016, I.V. Lacerda & E.T. Silva leg., 1♂ (UFMG 19806). Duque de Caxias, Parque Natural Municipal da Taquara, 22°35'35.3''S-43°14'17.8'' W, 36 m.a.s.l., 6 to 7-i-2016, A. Anker, P.H. Martins & R. Brito leg., 1♂ 1♀ (UFMG 21894, 21893).

Espírito Santo: Sooretama, Reserva Biológica Sooretama, 19°1'3''S-40° 1' 27''W, 23-v-2015, J.E. Santos-Júnior *et al.* leg., 1♂ 1♀ (UFMG 21112, 21111).

Diagnosis. See in Huber (2018a: 39-43)

Distribution. Widely distributed in the Brazilian states São Paulo, Rio de Janeiro, and Espírito Santo (Fig. 31).

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present study has been carried out in accordance with the Nagoya protocol through the Sistema Nacional de Gestão do Patrimônio Genético e do Conhecimento Tradicional Associado (SISGen; see Resolução CGEn Nº 006-2018).

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FIGURES



FIGURE 1. Live specimens, *Mesabolivar togatus* group. **A)** *Mesabolivar cyaneomaculatus* **sp. n.**, male from Parque Estadual do Ibitipoca, Gruta da Cruz cave. **B)** *Mesabolivar cyaneomaculatus* **sp. n.**, female from Parque Estadual do Ibitipoca, Gruta das Bromélias cave. **C)** *Mesabolivar* L17-205 **sp. n.**, male from RPPN Santuário do Caraça, Catas Altas. **D)** *Mesabolivar* L17-080 **sp. n.**, female from Parque Nacional Cavernas do Peruaçu, Lapa do Cipó cave.

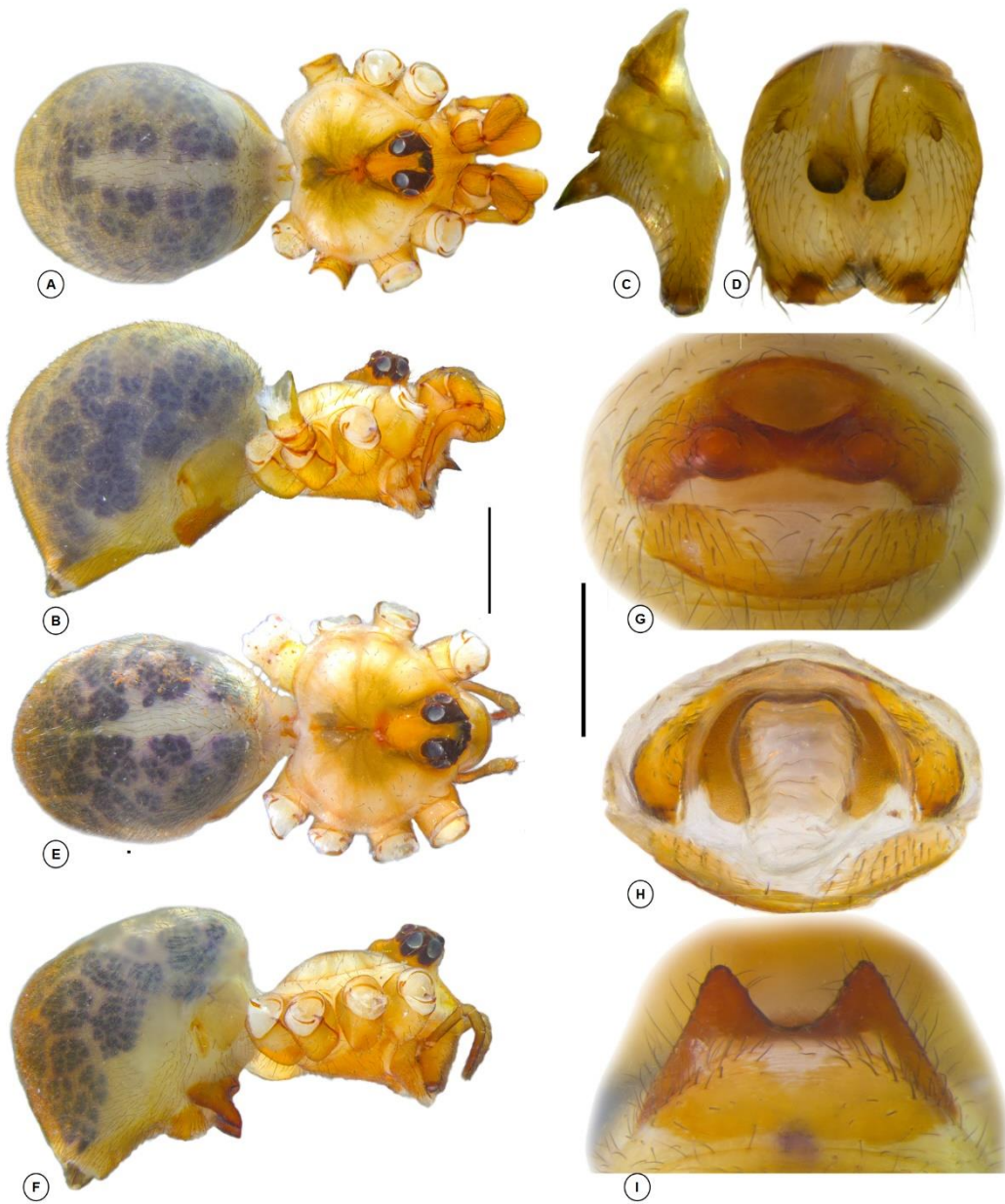


FIGURE 2. *Mesabolivar* L17-068 **sp. n.** Male habitus, **A**) dorsal and **B**) lateral views; male chelicerae, **C**) lateral and **D**) frontal views (UFMG 24699). Female habitus, **E**) dorsal and **F**) lateral views; cleared female genitalia, **G**) ventral, **H**) dorsal and **I**) posterior views (UFMG 24698). Scale lines: 1 (A-B-E-F); 0.2 (C-D- G-H-I).



FIGURE 3. Left male palp *Mesabolivar* L17-068 **sp. n.** **A)** prolateral and **B)** retrolateral views (UFMG 24699). Scale lines: 0.5.

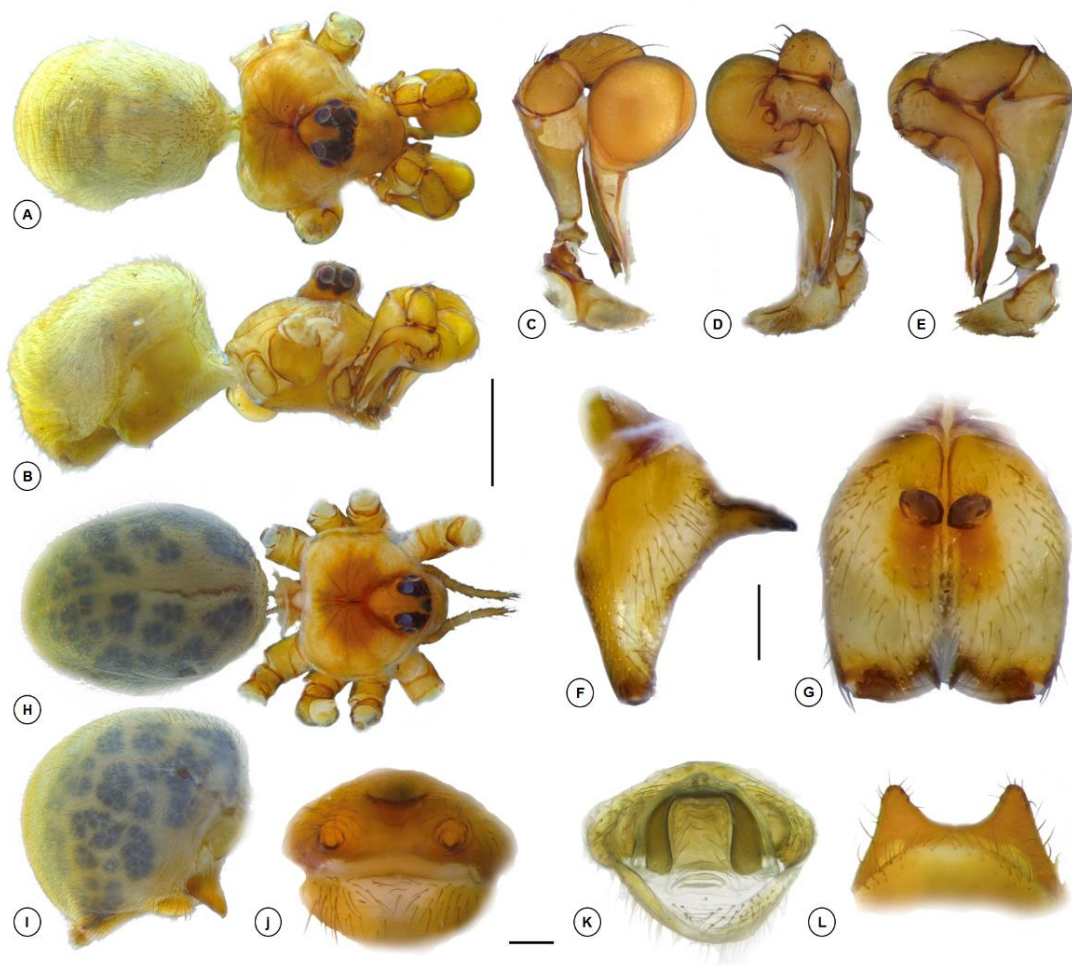


FIGURE 4. *Mesabolivar* L17-205 **sp. n.** Male habitus, **A)** dorsal and **B)** lateral views, left male palp, **C)** prolateral, **D)** ventral, and **E)** retrolateral views; male chelicerae, **F)** lateral and **G)** frontal views (UFMG 4604). Female habitus, **H)** dorsal and **I)** lateral views; cleared female genitalia, **J)** ventral, **K)** dorsal and **L)** posterior views (UFMG 13157). Scale lines: 1 (A-B-H-I); 0.5 (C-D-E); 0.2 (F-G); 0.1 (J-K-L).

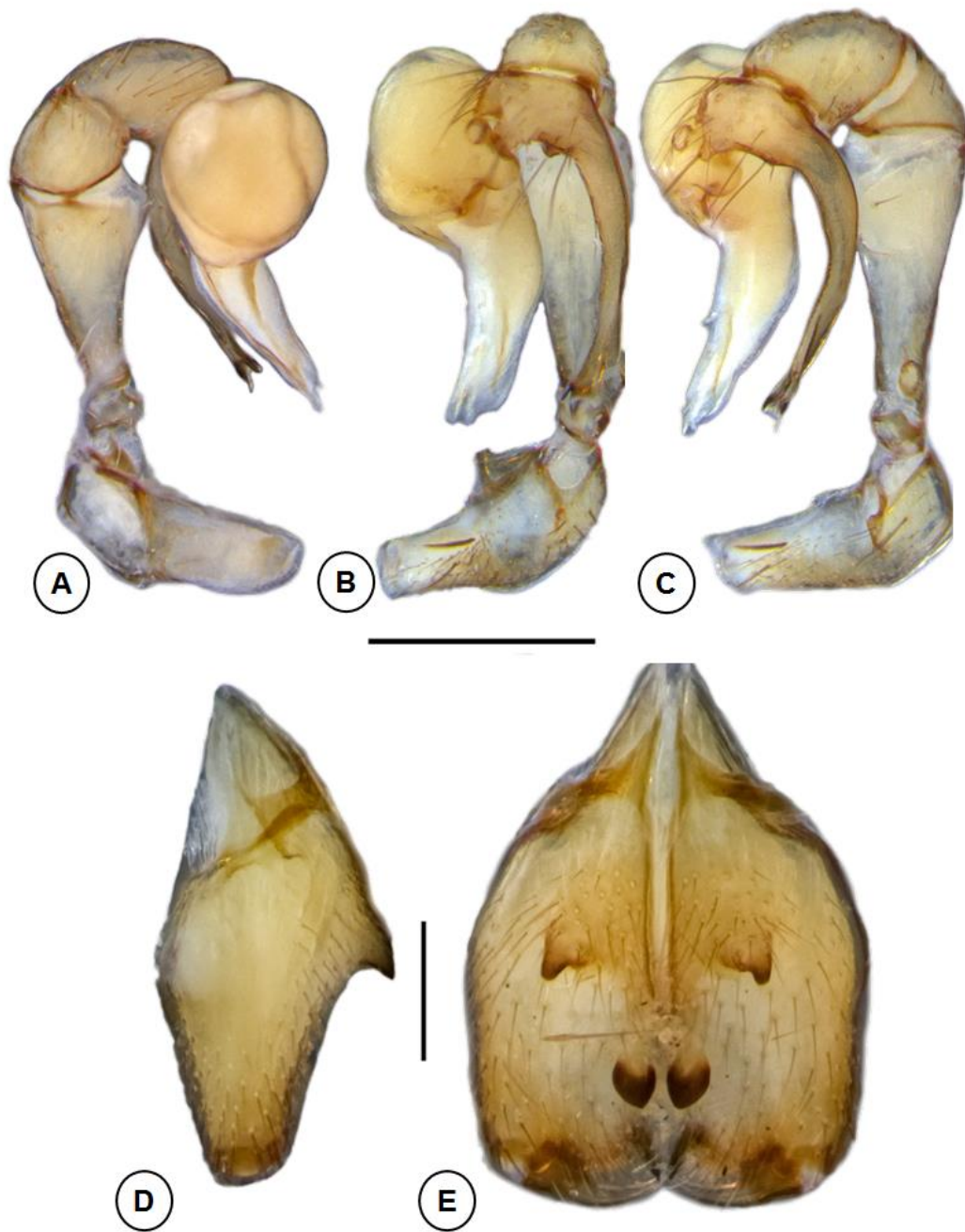


FIGURE 5. *Mesabolivar* L17-073 sp. n. Left male palp, **A**) prolateral, **B**) ventral and **C**) retrolateral views; male chelicerae, **D**) lateral and **E**) frontal views (UFMG 20220). Scale lines: 0.5 (A-B-C); 0.2 (D-E).

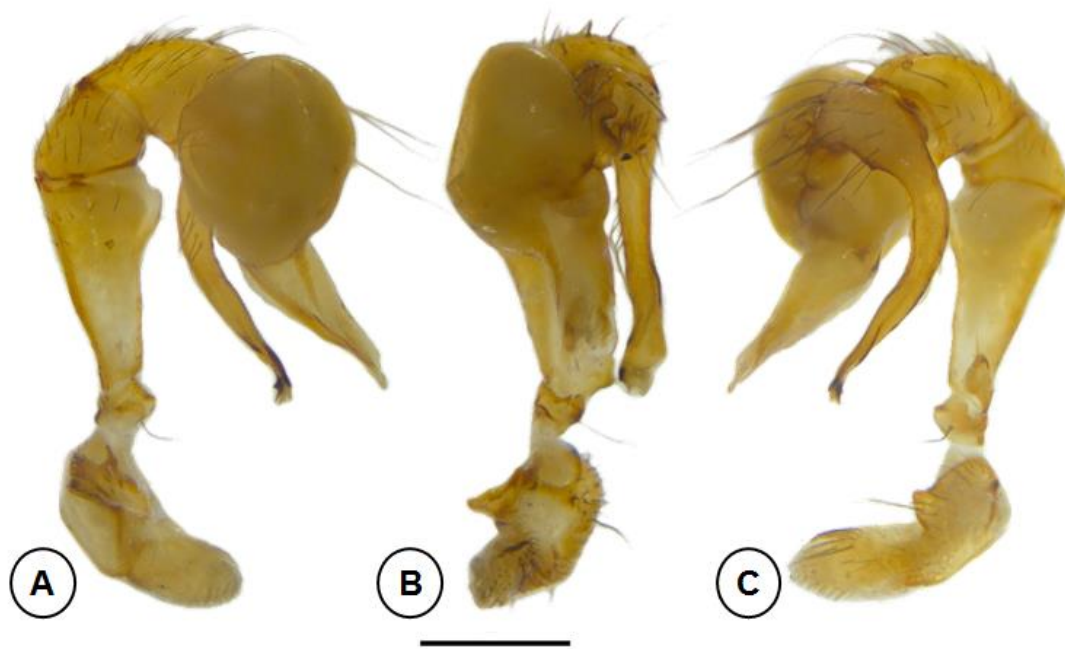


FIGURE 6. *Mesabolivar* L17-078 **sp. n.** Left male palp, **A)** prolateral, **B)** ventral, and **C)** retrolateral views (UFMG 21373). Scale lines: 0.2.

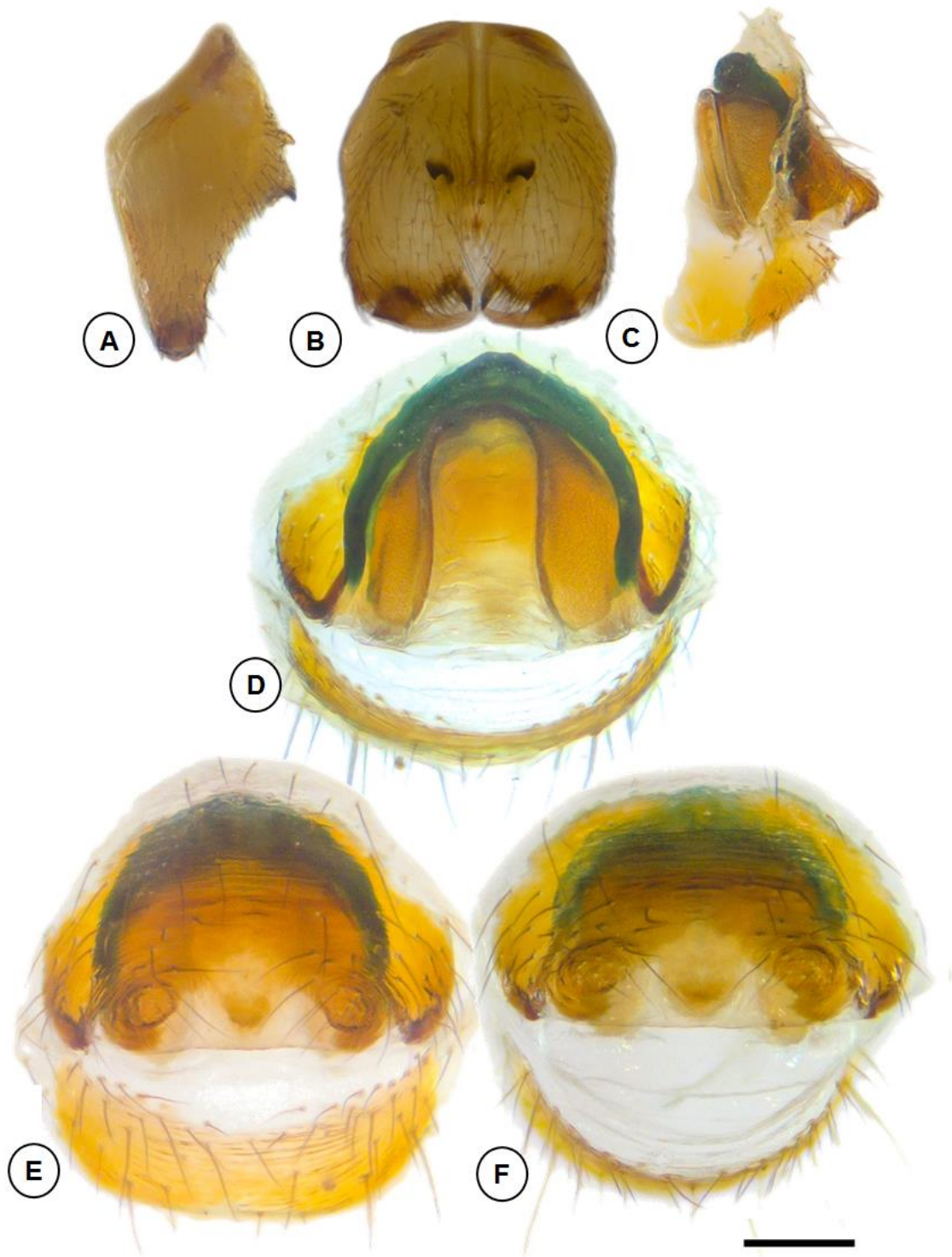


FIGURE 7. *Mesabolivar* L17-078 **sp. n.** Male chelicerae, **D)** lateral and **F)** frontal views (UFMG 21373). Cleared female genitalia, **C)** lateral, **D)** dorsal and **E)** ventral views (UFMG 6372), **F)** ventral views (variation in the epigyneum of a female) (UFMG 20257). Scale lines: 0.1.

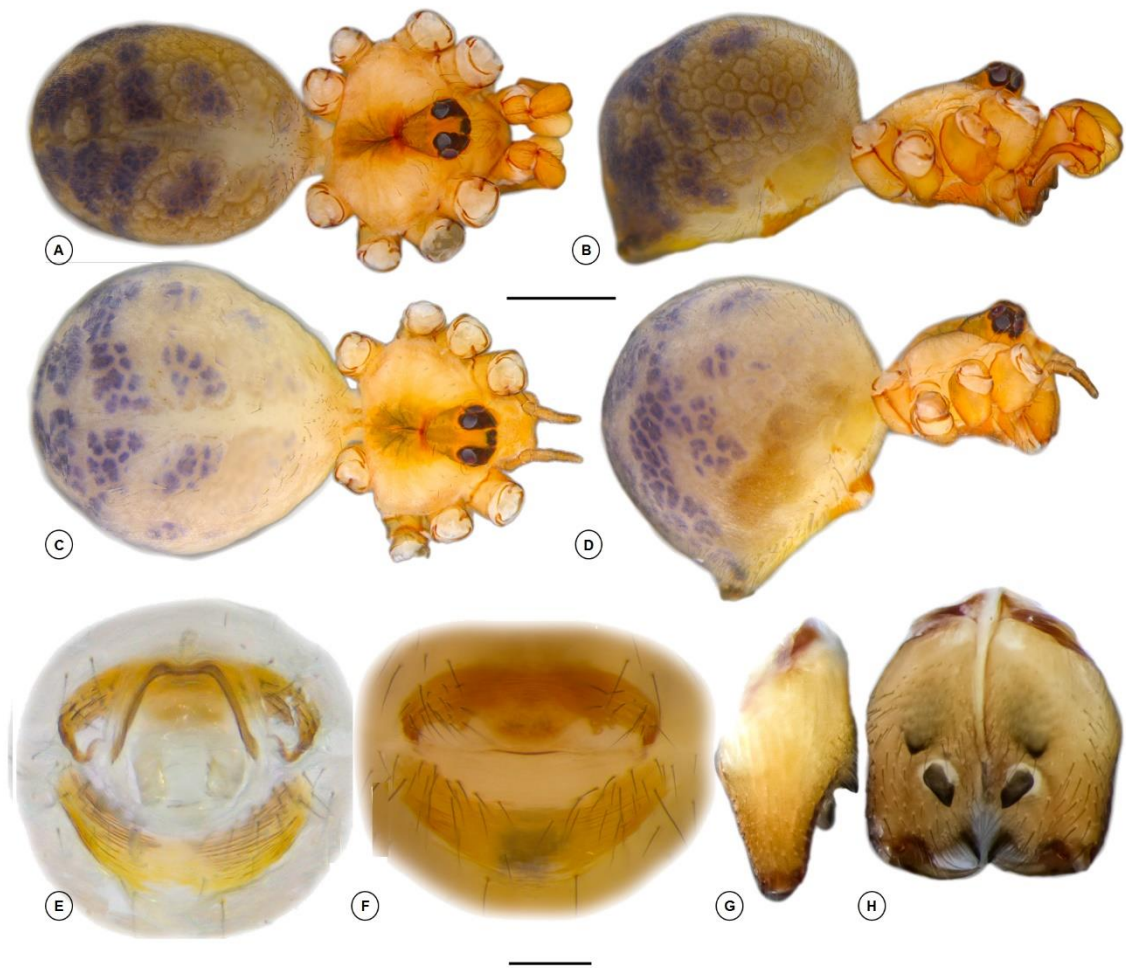


FIGURE 8. *Mesabolivar* L17-080 **sp. n.** Male habitus, **A**) dorsal and **B**) lateral views (UFMG 24681). Female habitus, **C**) dorsal and **D**) lateral views (UFMG 24682). Cleared female genitalia, **E**) dorsal and **H**) ventral views. Male chelicerae, **G**) lateral and **H**) frontal views. Scale lines: 1 (A-B-C-D); 0.2 (E-F-G-H)

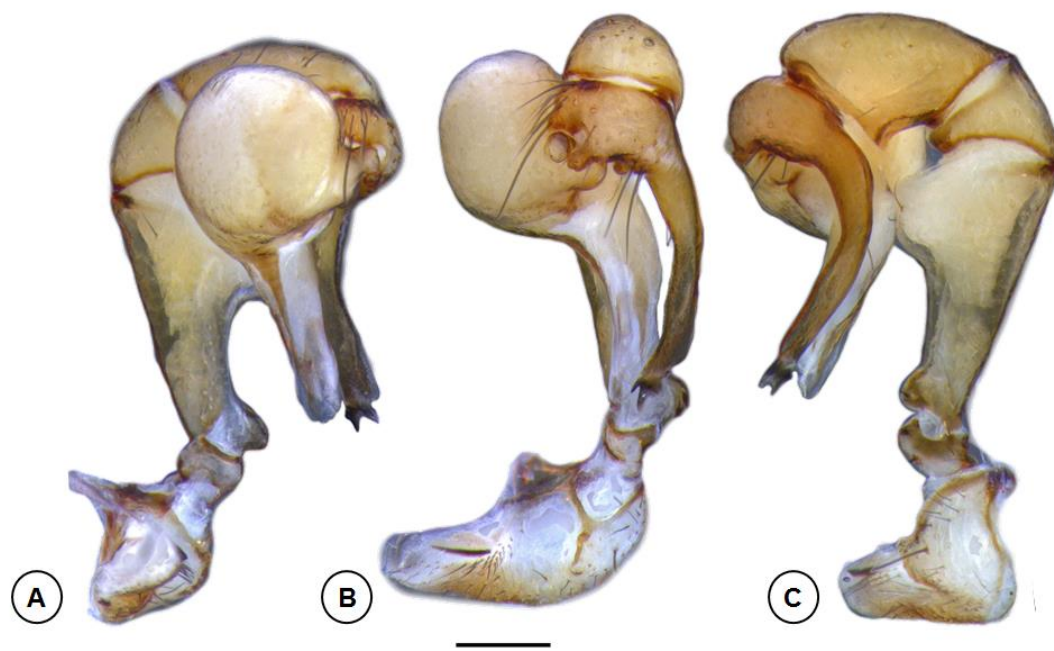


FIGURE 9. Left male palp *Mesabolivar* L17-080 **sp. n.** **A)** prolateral, **B)** ventral and **C)** retrolateral views (UFMG 24681). Scale lines: 0.2.

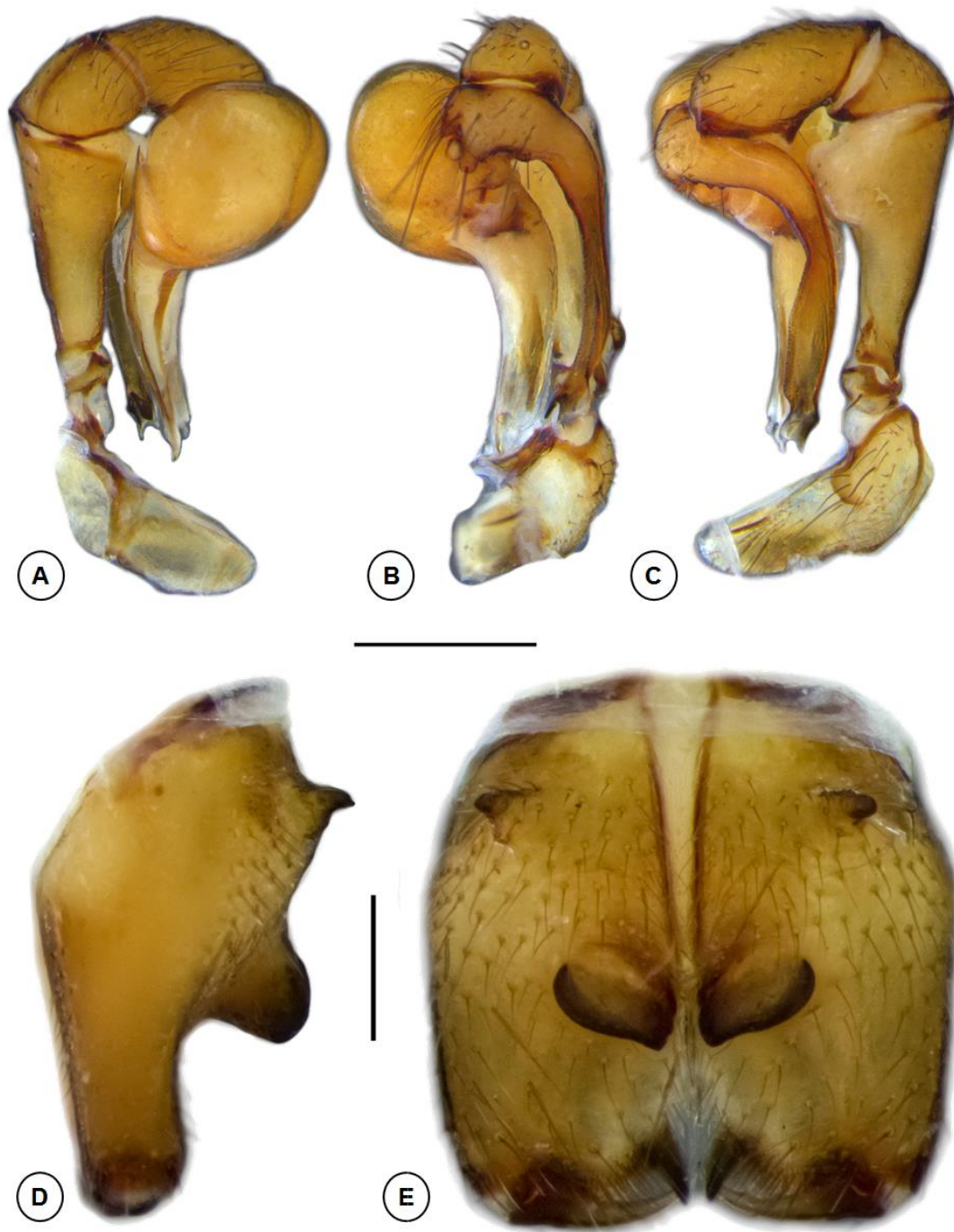


FIGURE 10. *Mesabolivar* L17-083 **sp. n.** Left male palp, **A)** prolateral, **B)** ventral, and **C)** retrolateral views; male chelicerae, **D)** lateral and **E)** frontal views (UFMG 20256). Scale lines: 0.5 (A-B-C); 0.2 (D-E).

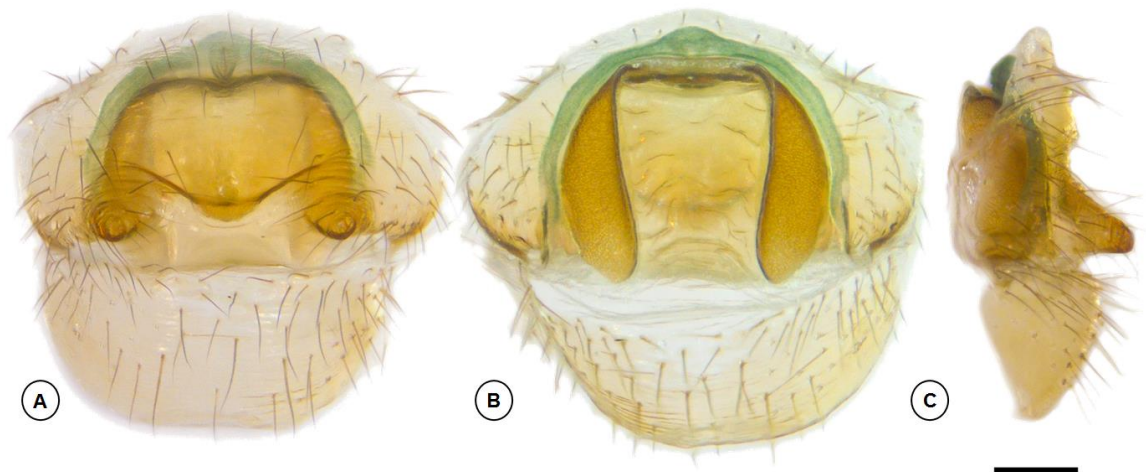


FIGURE 11. *Mesabolivar* L17-083 **sp. n.** Cleared female genitalia, **A)** ventral, **B)** dorsal and **C)** lateral views (UFMG 20245). Scale lines: 0.1.

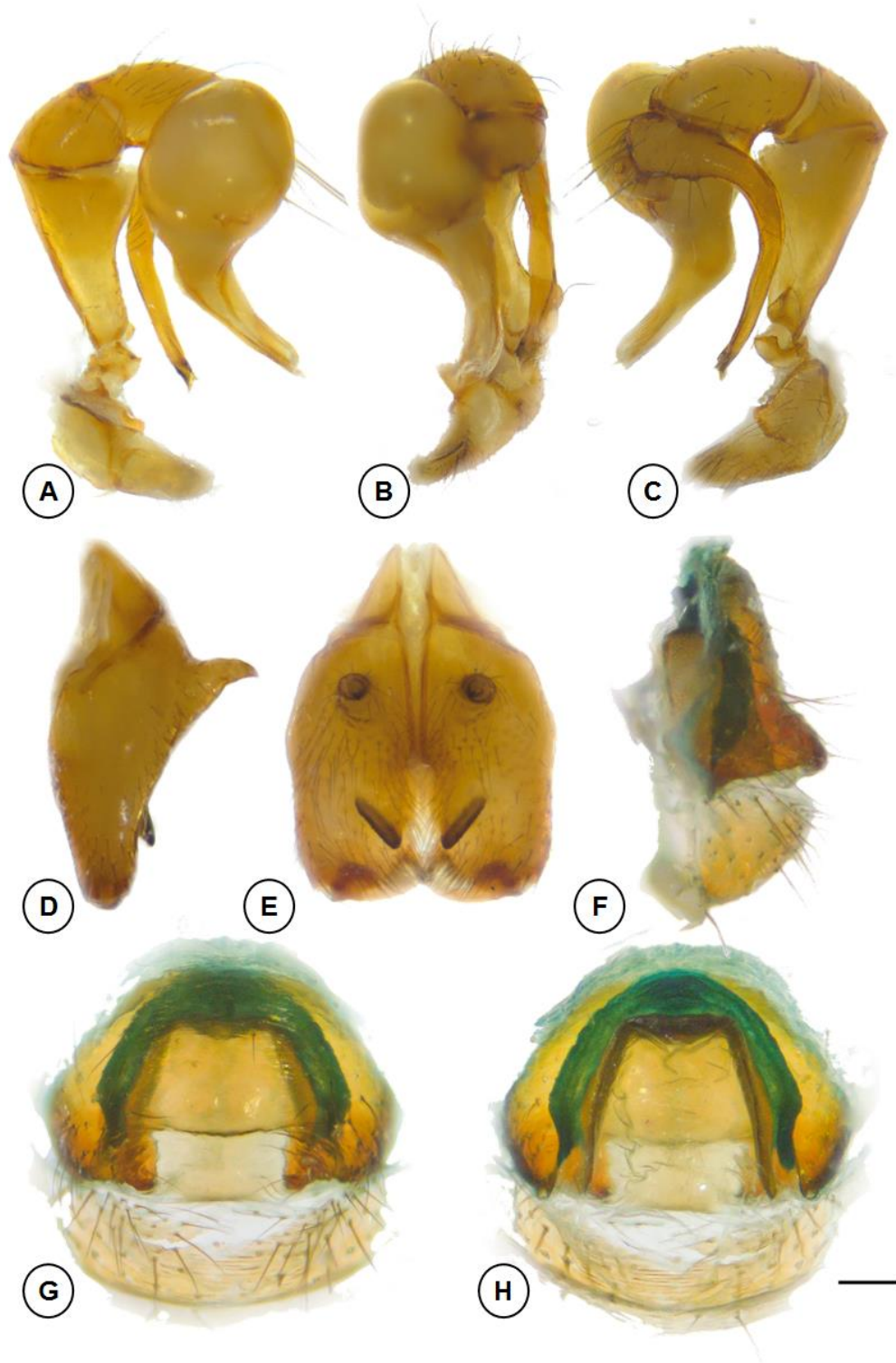


FIGURE 12. *Mesabolivar* L17-086 **sp. n.** Left male palp, **A)** prolateral, **B)** ventral, and **C)** retrolateral views; male chelicerae, **D)** lateral and **E)** frontal views (UFMG 19422). Cleared female genitalia, **F)** lateral, **G)** ventral and **H)** dorsal views (UFMG 15691). Scale lines: 0.1.

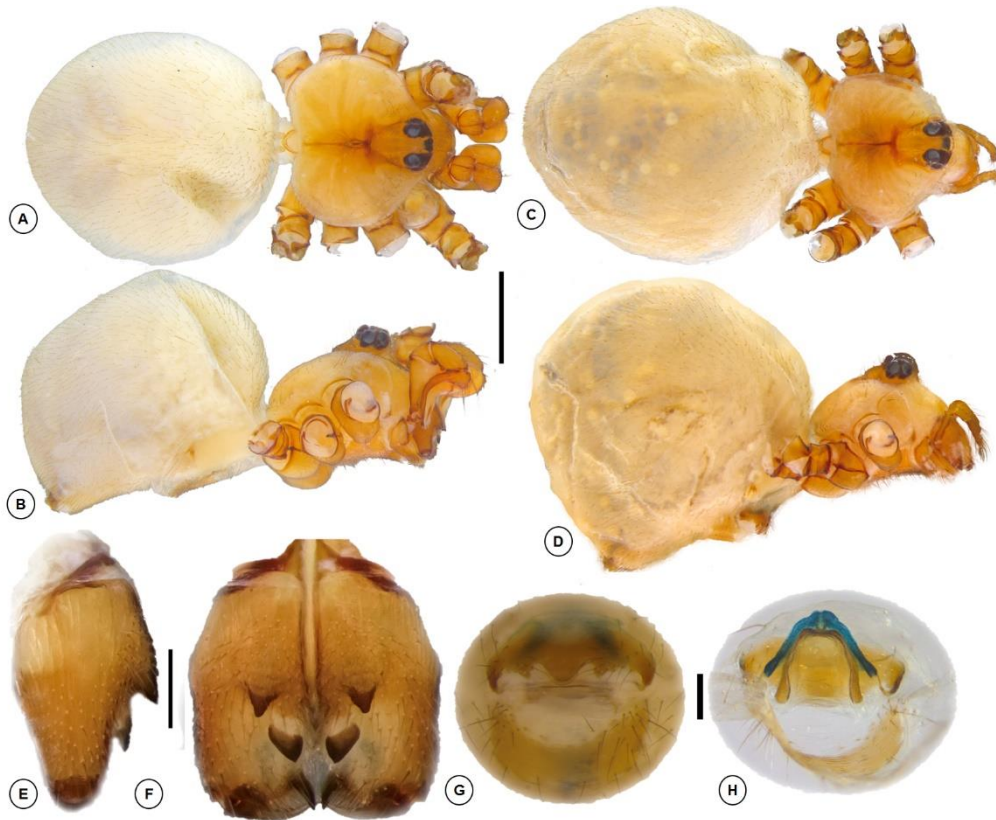


FIGURE 13. *Mesabolivar* L17-089 **sp. n.** Male habitus, **A**) dorsal and **B**) lateral views (UFMG 20239). Female habitus, **C**) dorsal and **D**) lateral views (UFMG 20240). Male chelicerae, **E**) lateral and **F**) frontal views. Cleared female genitalia, **G**) ventral and **H**) dorsal views. Scale lines: 1 (A-B-C-D); 0.2 (E-F); 0.1 (G-H).



FIGURE 14. Left male palp *Mesabolivar* L17-089 **sp. n.** **A)** prolateral, **B)** ventral and **C)** retrolateral views (UFMG 20239). Scale lines: 0.5.

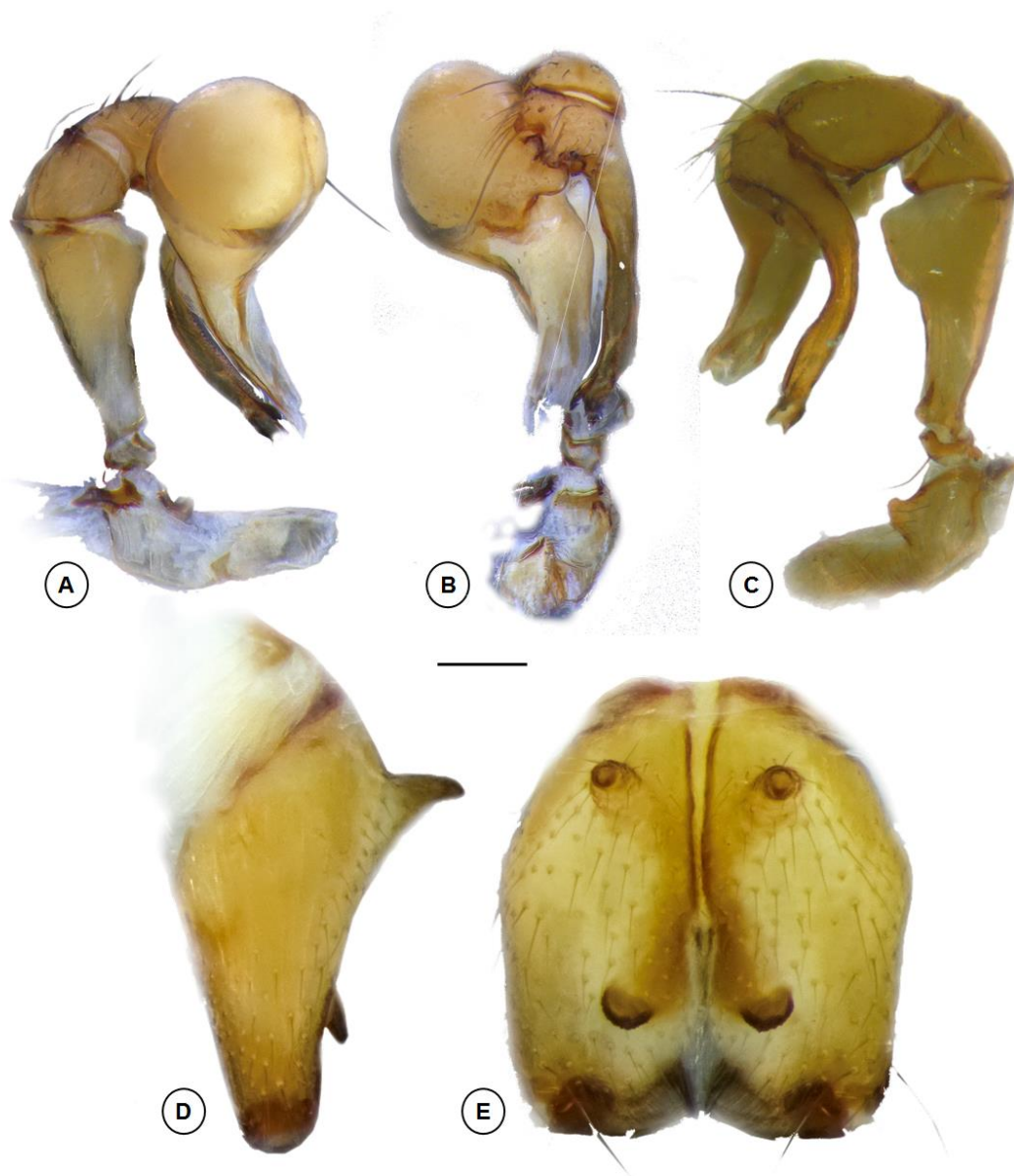


FIGURE 15. . *Mesabolivar* L17-097 **sp. n.** Left male palp, **A)** prolateral, **B)** ventral and **C)** retrolateral views; male chelicerae, **D)** lateral and **F)** frontal views (UFMG 17759). Scale lines: 0.5 (A-B-C); 0.2 (D-E).

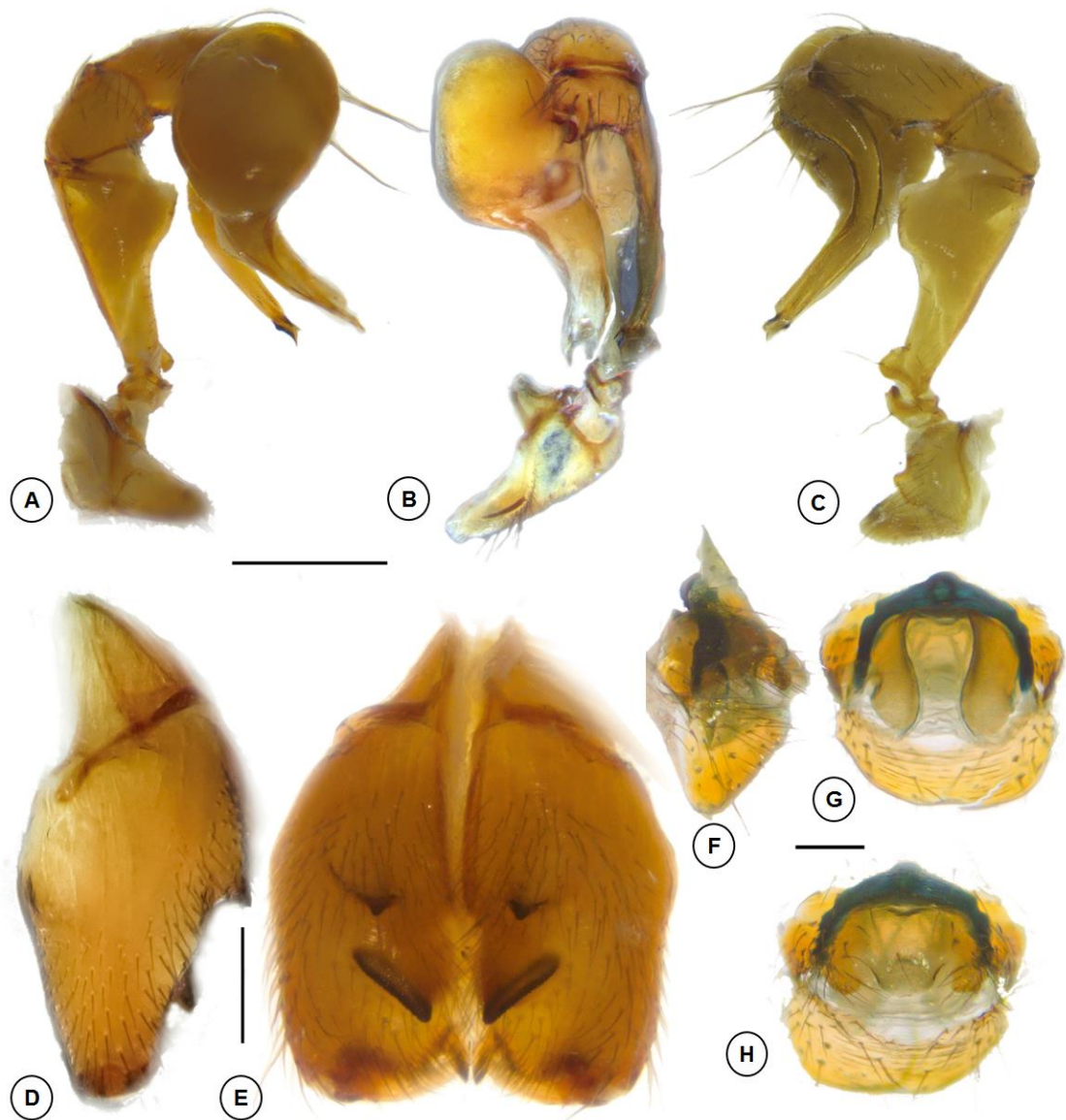


FIGURE 16. *Mesabolivar* L17-209 **sp. n.** Left male palp, **A)** prolateral, **B)** ventral, and **C)** retrolateral views; male chelicerae, **D)** lateral and **E)** frontal views (UFMG 18798). Cleared female genitalia, **F)** lateral, **G)** dorsal and **H)** ventral views (UFMG 20004). Scale lines: 0.1.

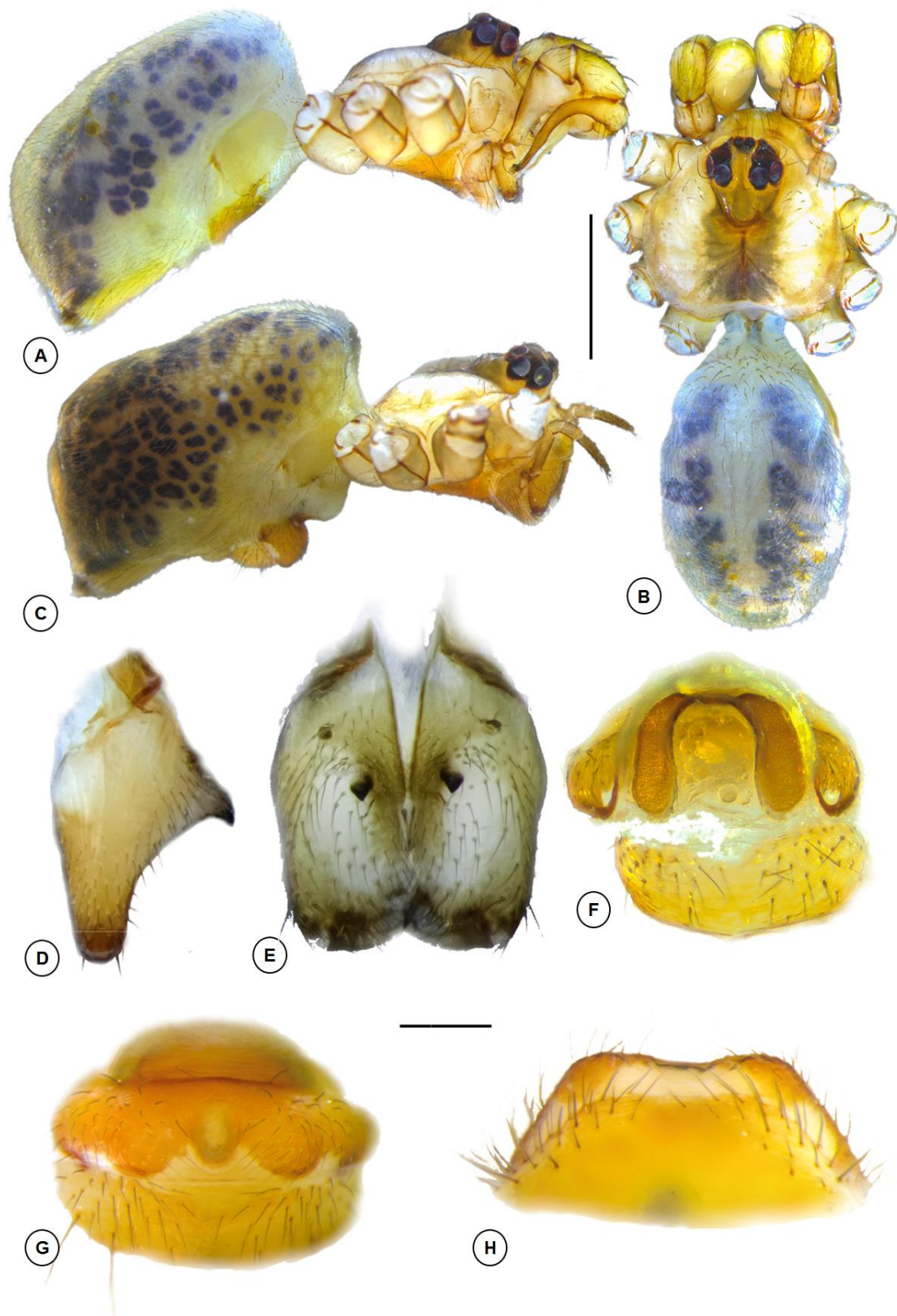


FIGURE 17. *Mesabolivar* L17-208 **sp. n.** Male habitus, **A**) dorsal and **B**) lateral views (UFMG 24676). Female habitus, **C**) lateral views (UFMG 24677). Male chelicerae, **D**) lateral and **E**) frontal views. Cleared female genitalia, **F**) dorsal, **G**) ventral and **H**) posterior views. Scale lines: 1 (A-B-C); 0.2 (D-E-F-G-H).

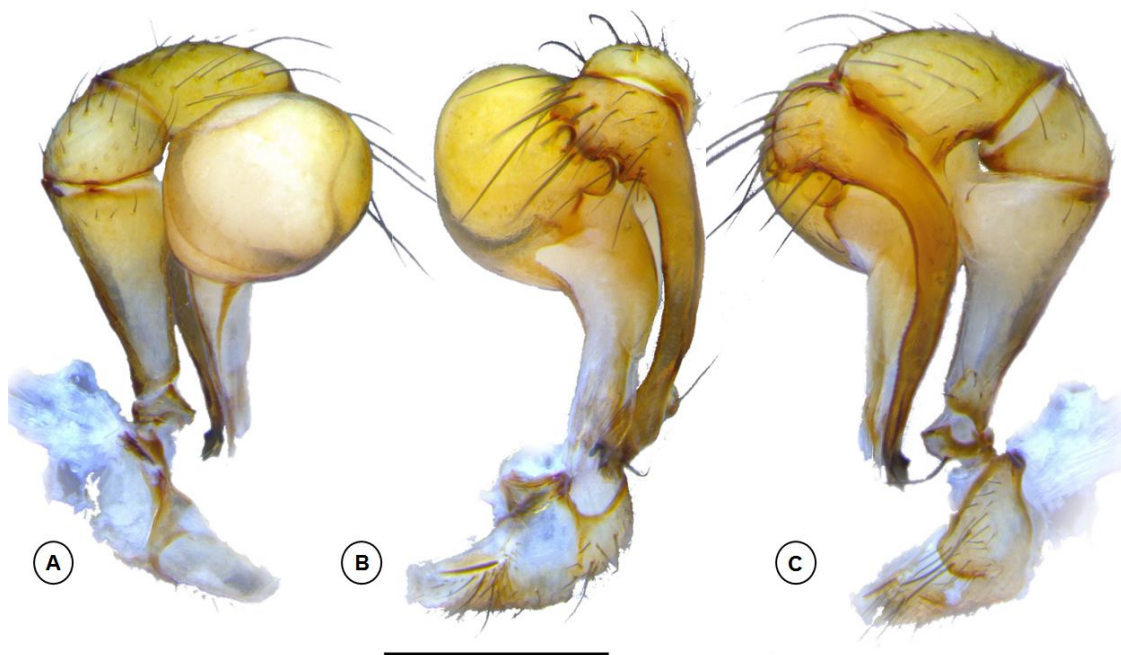


FIGURE 18. Left male palp *Mesabolivar L17-208 sp. n.* **A)** prolateral, **B)** ventral and **C)** retrolateral views (UFMG 24676). Scale lines: 0.5.

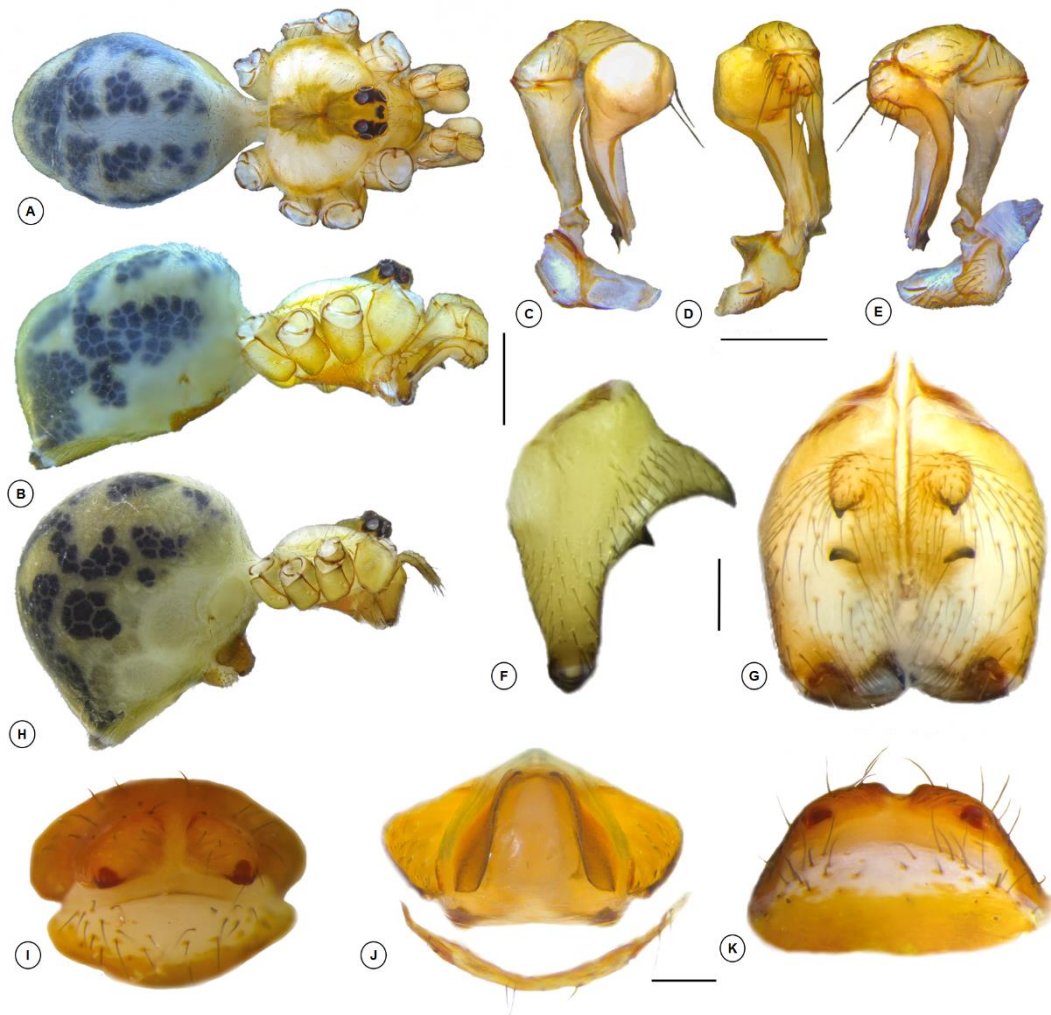


FIGURE 19. *Mesabolivar* R20-015 **sp. n.** Male habitus, **A)** dorsal and **B)** lateral views: left male palp, **C)** prolateral, **D)** ventral, and **E)** retrolateral views; male chelicerae, **F)** lateral and **G)** frontal views (UFMG 24683). **H)** Female habitus lateral views, cleared female genitalia, **I)** ventral, **J)** dorsal and **K)** posterior views (UFMG 24684). Scale lines: 1 (A-B-H); 0.5 (C-D-E); 0.2 (F-G-J-K-L).

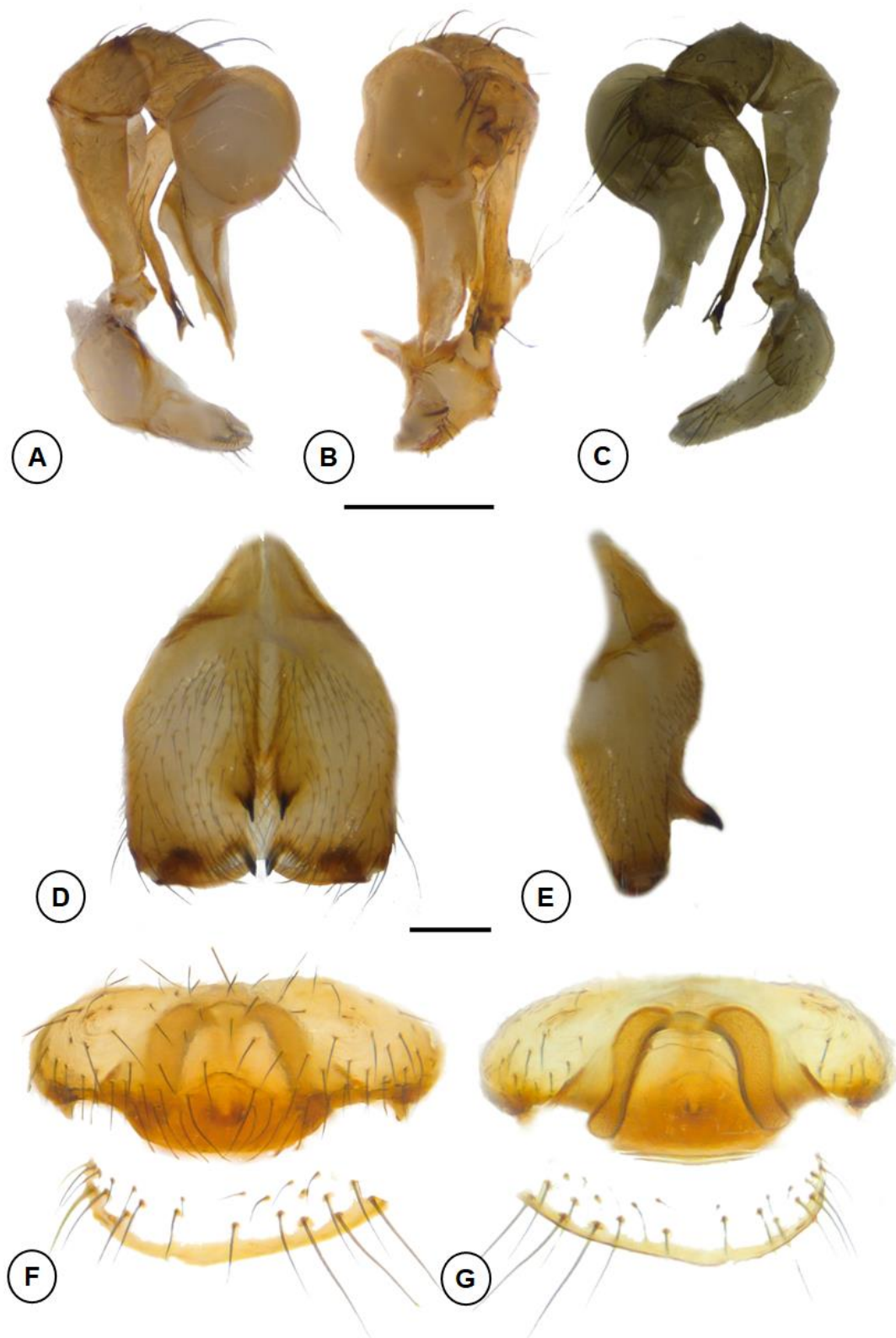


FIGURE 20. *Mesabolivar* R20-008 **sp. n.** Left male palp, **A**) prolateral, **B**) ventral, and **C**) retrolateral views; male chelicerae, **D**) lateral and **E**) frontal views (UFMG 24692). Cleared female genitalia, **F**) lateral, **G**) ventral and **H**) dorsal views (UFMG 24691). Scale lines:0.2 (A-B-C); (D-E-F-G) 0.1.



FIGURE 21. *Mesabolivar* R20-003 **sp. n.** Male habitus, **A)** dorsal and **B)** lateral views; male chelicerae, **C)** lateral and **D)** frontal views (UFMG 24685). Female habitus, **E)** lateral and **F)** ventral views, cleared female genitalia, **F)** dorsal and **G)** ventral (UFMG 24683). Scale lines: 1 (A-B-E-F); 0.1 (C-D); 0.2 (G-H).

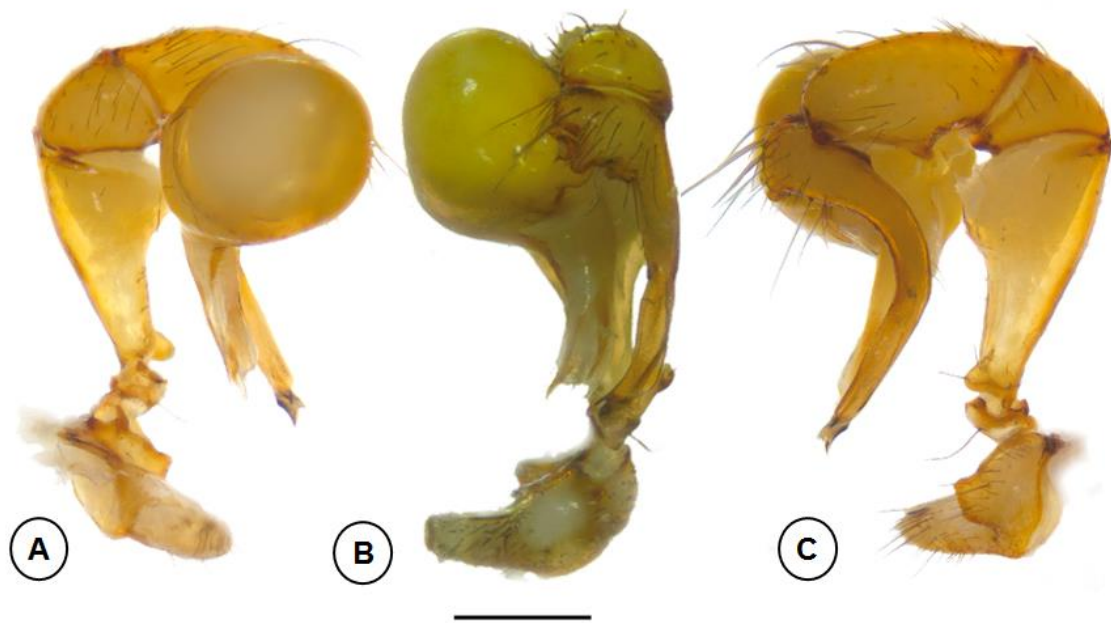


FIGURE 22. Left male palp *Mesabolivar R20-003* sp. n. **A)** prolateral, **B)** ventral and **C)** retrolateral views (UFMG 24695). Scale lines: 0.2.

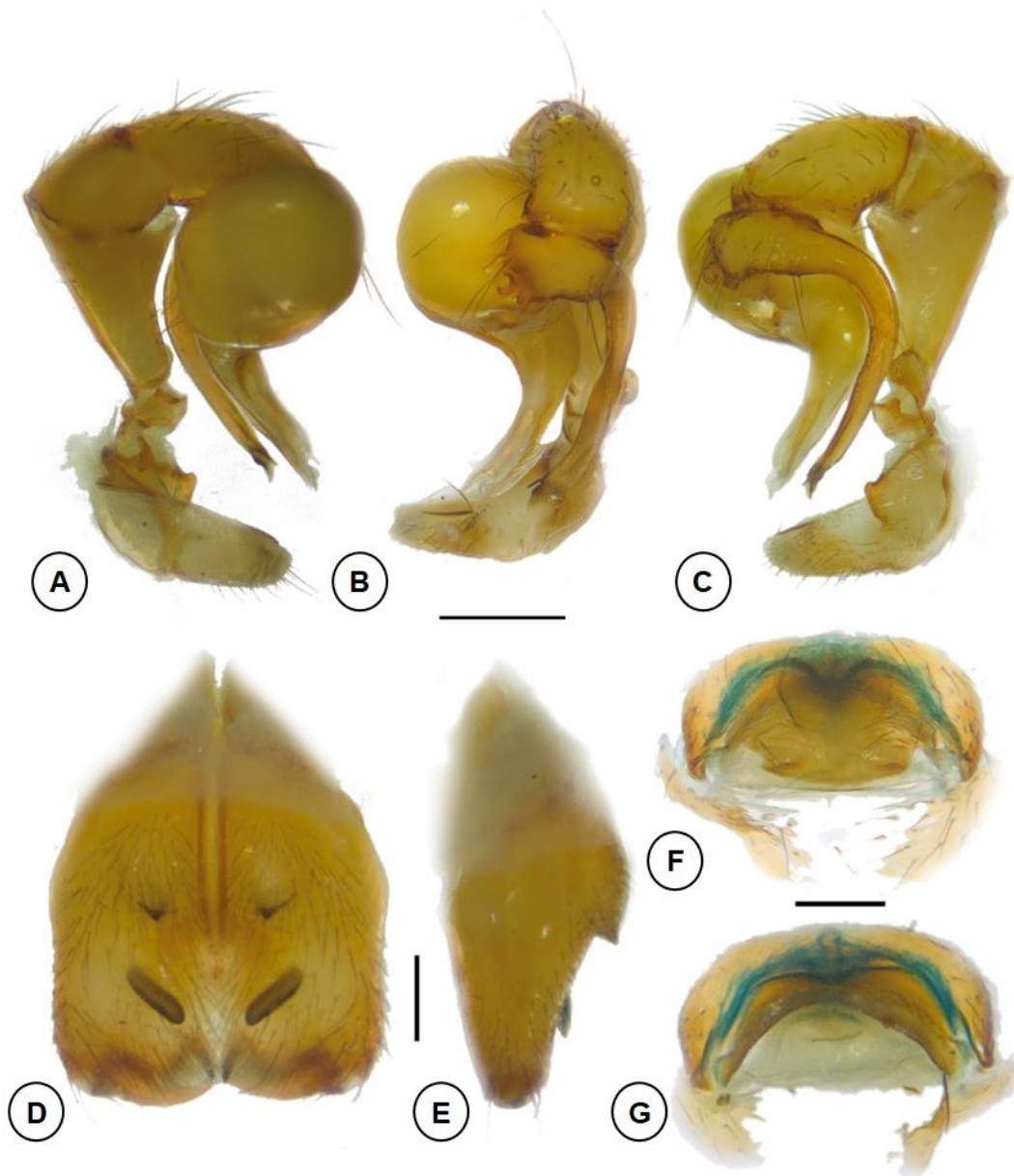


FIGURE 23. *Mesabolivar L17-104 sp. n.* Left male palp, **A**) prolateral, **B**) ventral, and **C**) retrolateral views; male chelicerae, **D**) frontal and **E**) lateral views (UFMG 22063). Cleared female genitalia, **F**) ventral and **G**) dorsal views (UFMG 21961). Scale lines: 0.2 (A-B-C); 0.1 (D-E-F-G).

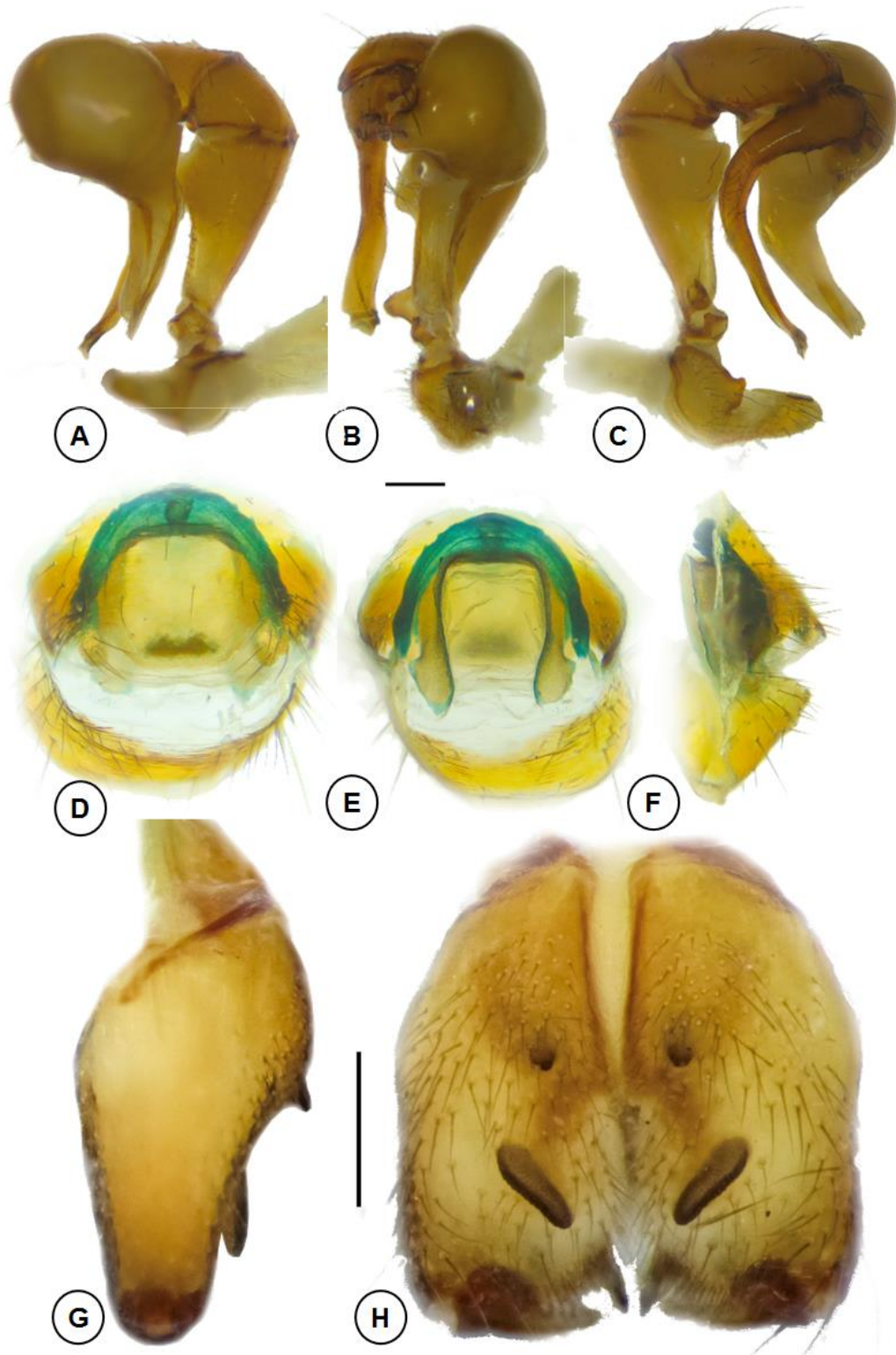


FIGURE 24. *Mesabolivar* L17-099 **sp. n.** Right male palp, **A)** prolateral, **B)** ventral, and **C)** retrolateral views. Cleared female genitalia, **D)** ventral **E)** dorsal and **F)** lateral views (UFMG 22014). Male chelicerae, **G)** lateral and **H)** frontal views (UFMG 22012). Scale lines: 0.1 (A-B-C-D-E-F); 0.2 (G-H).



FIGURE 25. Habitats of representatives of the *togatus* group, *Mesabolivar* R20-003 **sp. n.** and *Mesabolivar* L17-080 **sp. n.**, at the Parque Nacional Cavernas de Peruaçu. **A)** Habitat of *M.* R20-003 **sp. n.**, surroundings of the Gruta Olhos D'água cave and **B)** entrance of the Lapa do Cipó cave. **C-D)** Habitat of *M.* L17-080 **sp. n.**, **C)** entrance luminous zone and **D)** entrance of the Gruta Janelão cave.



FIGURE 26. Habitats of representatives of the *togatus* group, **A-B)** Habitat of *M. L17-068 sp. n.*, Serra da Calçada, where the species is found in forested patches (B) surrounded by opened vegetation (A). **C-D)** Habitat of *M. L17-205*, Reserva Particular do Patrimônio Natural Caraça, where the species was found under rocks along a water course. **E)** Habitat of *M. baianus*, Reserva Jequitibá, Serra da Jibóia, where the species was found in vegetation and under rocks along a water course. **F)** Habitat of *M. buraquinho*, Floresta Nacional da Restinga de Cabedelo, a sandy coastal plain where the species was found in vegetation.

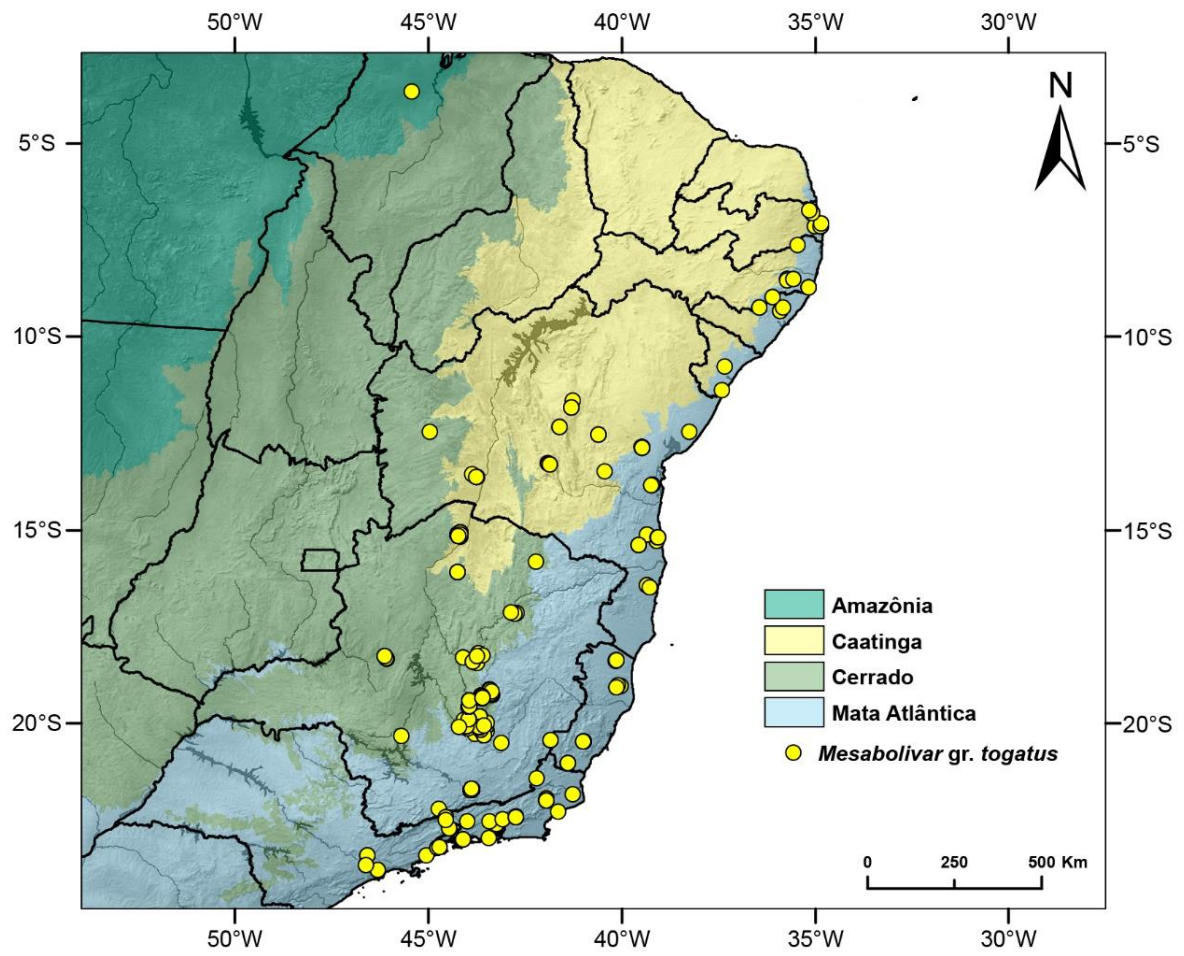


FIGURE 27. Updated geographic distribution of *Mesabolivar togatus* species group, in different biomes of Brazil.

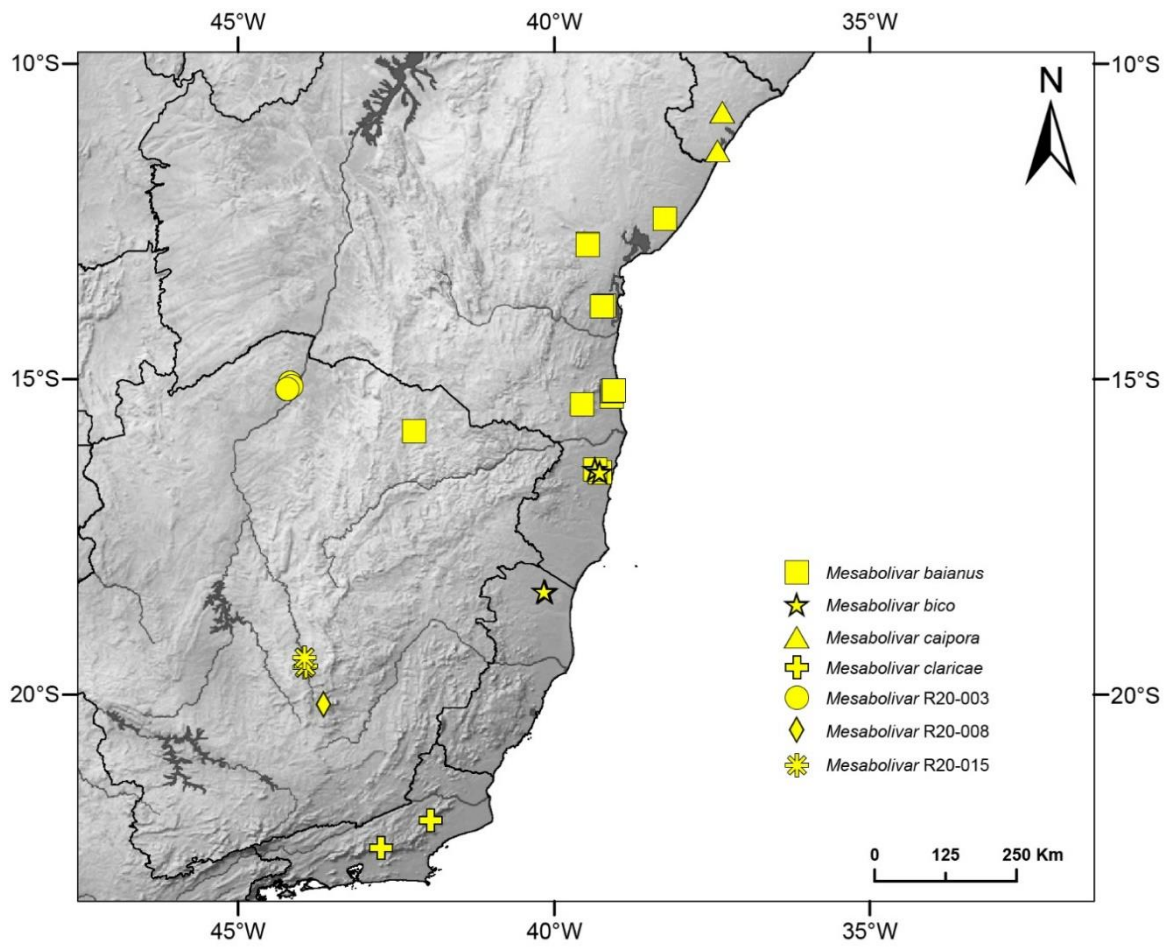


FIGURE 28. Geographic distribution of *M. baianus* (squares), *M. bico* (star), *M. caipora* (triangle), *M. claricae* (crosses), *M. R20-003 sp. n.* (circles), *M. R20-008 sp. n.* (rhombus), *M. R20-015 sp. n.* (asterisk).

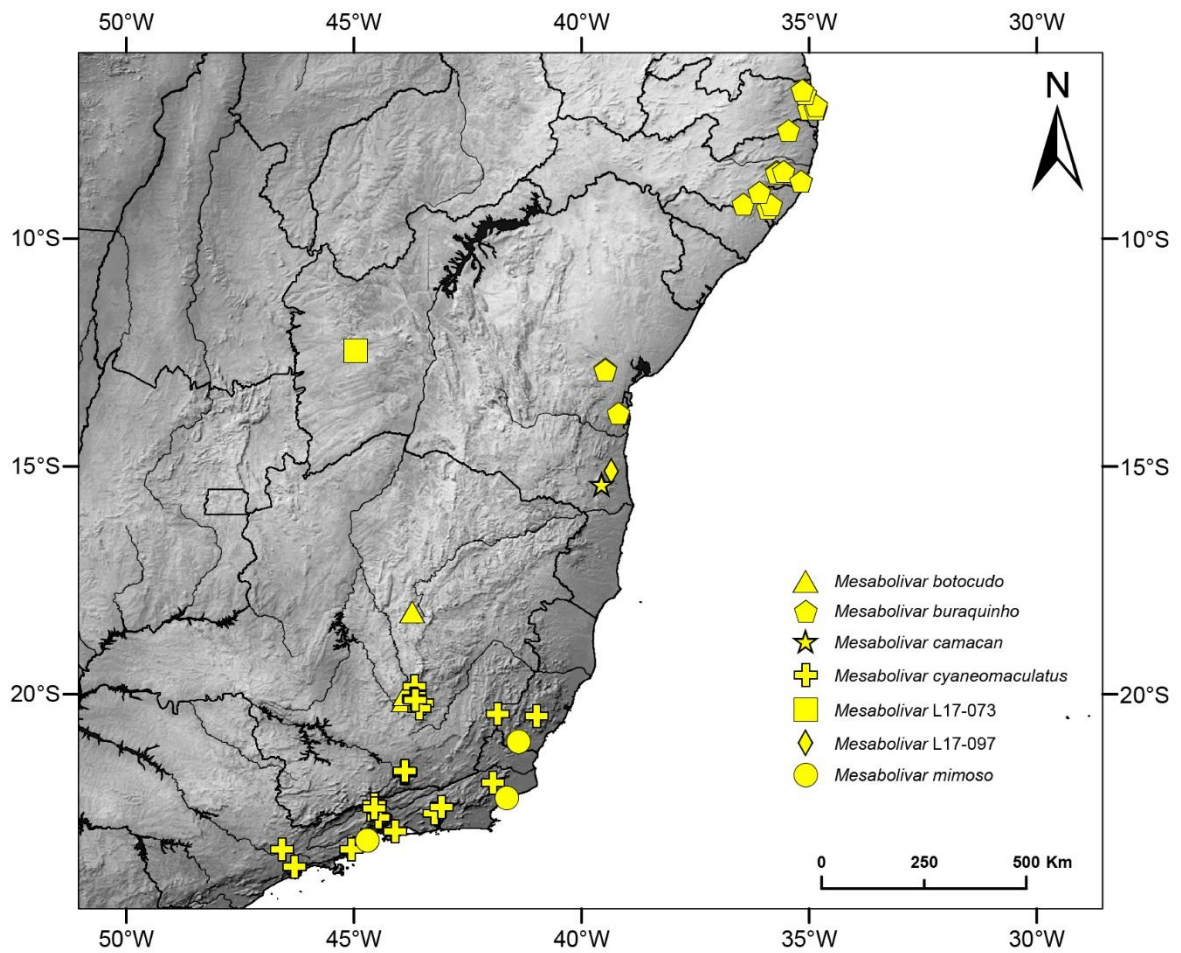


FIGURE 29. Geographic distribution of *M. botocudo* (triangle), *M. buraquinho* (pentagon), *M. camacan* (star), *M. cyaneomaculatus* (crosses), *M. L17-073 sp. n.* (squares), *M. L17-097 sp. n.* (rhombus), *M. mimoso* (circles).

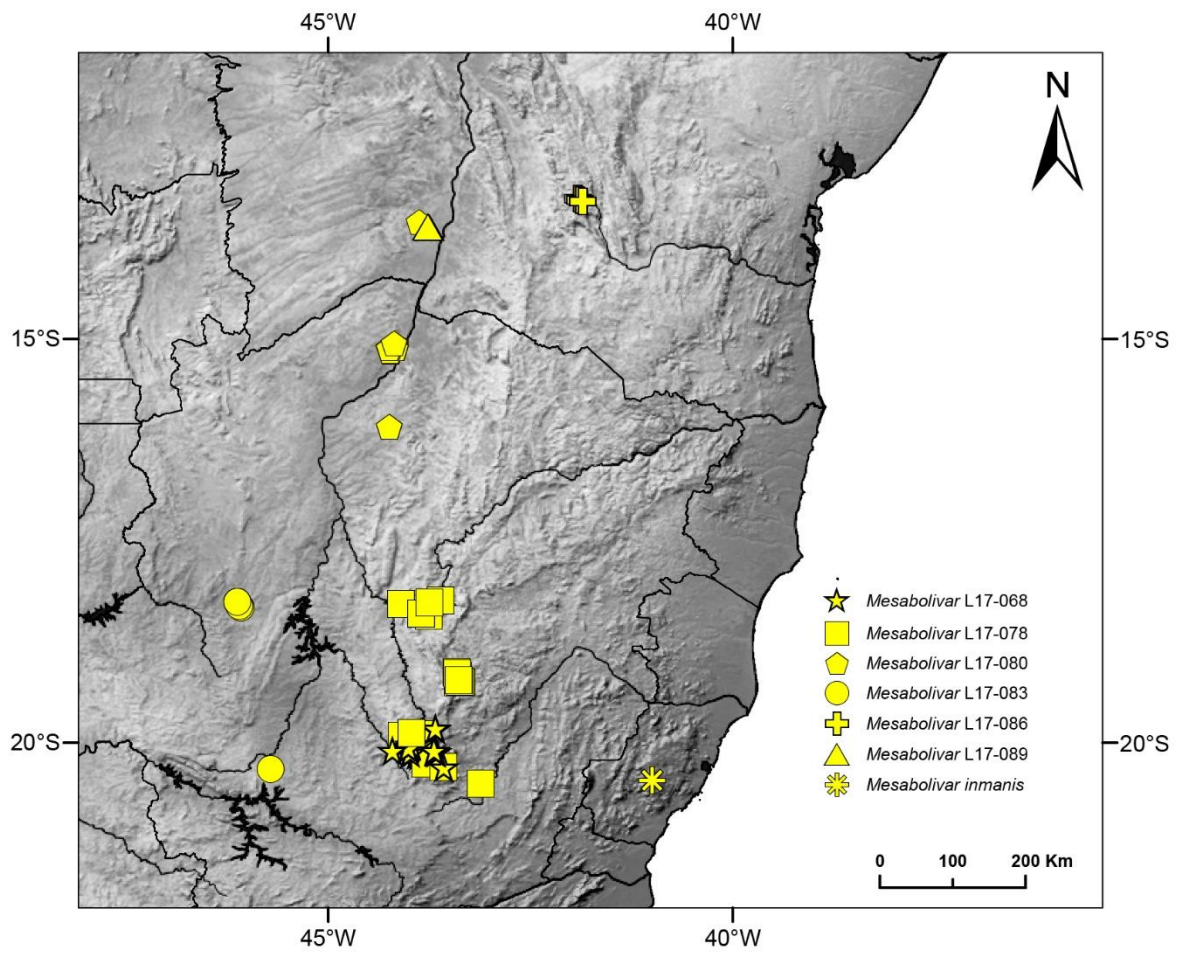


FIGURE 30. Geographic distribution of *M. L17-068* sp. n. (star), *M. L17-078* sp. n. (squares), *M. L17-080* sp. n. (rhombus), *M. L17-083* sp. n. (circles), *M. L17-086* sp. n. (crosses), *M. L17-089* sp. n. (triangle), *M. inmanis* (asterisk).

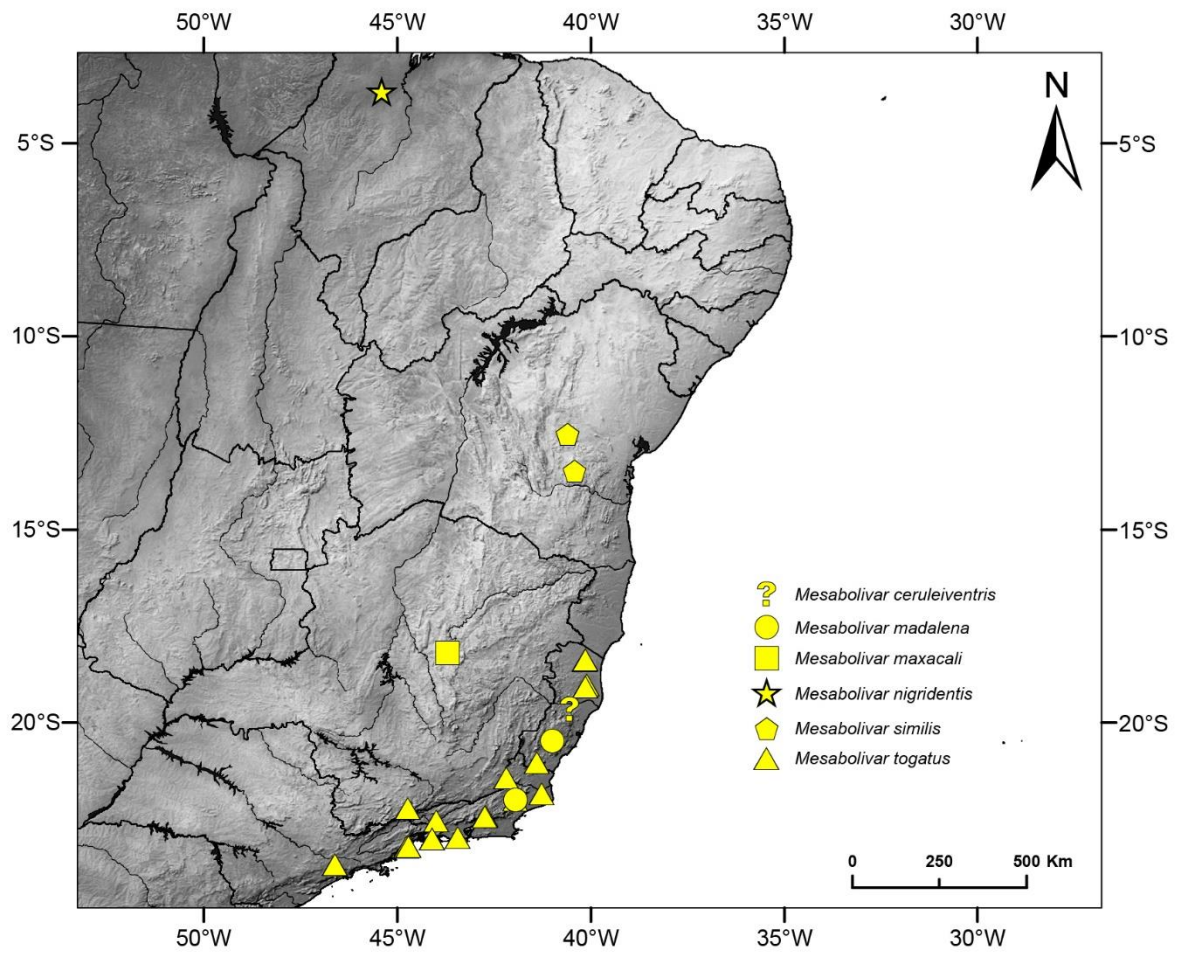


FIGURE 31. Geographic distribution of *M. ceruleiventris* (dubious record from the state of Espírito Santo, signed herein by a question mark), *M. madalena* (circles), *M. maxacali* (squares), *M. nigridentis* (star), *M. similis* (rhombus), *M. togatus* (triangle).

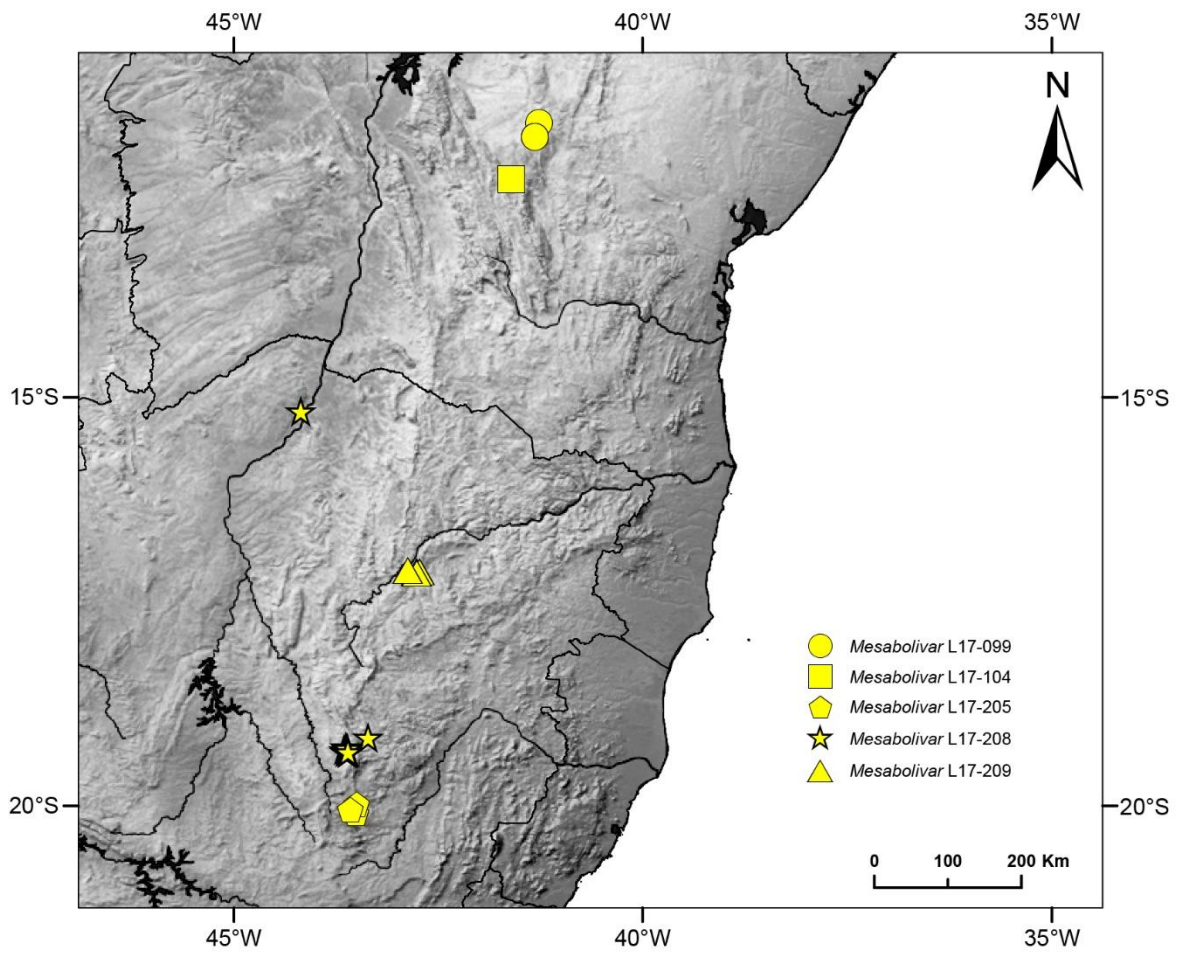


FIGURE 32. Geographic distribution of *M. L17-099 sp. n.* (circles), *M. L17-104 sp. n.* (squares), *M. L17-205 sp. n.* (rhombus), *M. L17-208 sp. n.* (star), *M. L17-209 sp. n.* (triangle).