Scientific Note

New records of *Pelecinus polyturator* (Drury) (Hymenoptera: Proctotrupoidea: Pelecinidae) for Brazil

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Abstract. Species of Pelecinidae are very uncommonly collected in Brazil, despite they are one of the largest and most remarkable species of Hymenoptera. Here in, we report new records of *Pelecinus polyturator* (Drury, 1773) for Acre, Maranhão (Amazon rainforest) and Espírito Santo (Atlantic rainforest).

Key words: Amazon rainforest, Atlantic rainforest, Neotropical region.

Resumen. Las especies de Pelecinidae se recolectan con muy poca frecuencia en Brasil, apesar de que son una de las especies más grandes y notables de Hymenoptera. Aquí, reportamos nuevos registros de *Pelecinus polyturator* (Drury, 1773) para Acre, Maranhão (Selva Amazónica) y Espírito Santo (Selva Atlántica).

Palabras clave: Mata Atlántica, Región Neotropical, Selva Amazónica

Pelecinidae (Hymenoptera) is a peculiar group of New World parasitoid wasps and it assembles three extant species in the unique genus *Pelecinus* Latreille (Johnson & Musetti 1999). Their females have slender and peculiar body shape, with 2.0 to 9.0 millimeters in length, and they are among the longest Hymenoptera. The metasomal segments are long, tubular, and their articulations allow rotation and ample vertical movement, an adaptation for searching and identifying hosts underground (Mason 1984). Fossil pelecinids (39 species in ten genera) were described from central and eastern Asia since Middle Jurassic (aprox. 165 Ma), and those females presented a similar elongated metasoma (Liu et al. 2009; Shih et al. 2009). Therefore, extant pelecinids species are relicts of a pattern of body shape to explore a specific host guild which evolved a long time ago. Hosts and aspects of natural history are known only to *Pelecinus polyturator* (Drury) (Hymenoptera: Proctotrupoidea: Pelecinidae) that seems to be a solitary koinobiont endoparasitoid of larvae to pupae of some Scarabaeidae beetles (Masner 2006). This wasp was recorded as parasitoid of...
Phyllophaga anxia (LeConte), P. inversa (Hornm), P. drakei Kirby, P. rugosa (Melsheimer) (Melolonthinae), and Podischnus agenor Olivier, all soil inhabitants (Lim et al. 1980; Johnson y Musetti 1999). In addition, the species are primarily thelytokous in areas north of Mexico, where males are restricted in distribution. In southern areas the species is bisexual (Brues 1928; Johnson & Musetti 1999).

Pelecinus thoracicus Klug occurs in Mexico; P. dichrous Perty, in Brazil, Paraguay, Argentina and Uruguay; and P. polyturator, is widespread in America and has been reported from Canada, USA, Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Ecuador, Brazil, Bolivia, Paraguay, Argentina, and Uruguay (Johnson & Musetti 1999; Lara 2020). In Brazil, P. polyturator are recorded for the following states: Amazonas, Alagoas, Bahia, Goiás, Mato Grosso, Minas Gerais, Pará, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, São Paulo and Santa Catarina (Lara 2020). Despite they are one of the largest and most remarkable species of Hymenoptera, species of Pelecinidae are rarely collected in some areas. The knowledge of the actual geographic distribution is fundamental to evaluate eventual threats to these relict species. So, we present new distributional records to P. polyturator intending to expand its actual distributional range.

This study was based on material deposited in the following four institutions (names of curators given in parenthesis):

IBCBE – Coleção de Insetos Entomófagos “Oscar Monte”, Instituto Biológico, Campinas, São Paulo, Brazil (V.A. Costa).

INPA – Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil (M.L. Oliveira).

LRRP – Instituto Biológico, Ribeirão Preto, São Paulo, Brazil (N.W. Perioto).

UFES – Universidade Federal do Espírito Santo, Vitória, Espírito Santo, Brazil (M.T. Tavares).

The specimens were identified based on the key presented by Johnson & Musetti (1999). Observations were carried out using a Leica MZ 9.5 stereomicroscope under fluorescent light source. Photographs were taken using a Leica (M165C) stereomicroscope with a DFC420 digital camera and Leica Application Suite V3.4.1 (Version 2009). Series of partially focused digital images were stacked using the Helicon Focus software (Version 6.7) to produce final images with enhanced quality.

Species distributions were assembled in a dataset and incorporated into distribution maps. Geographic coordinates of the species records, if not present in labels, were taken from Google Earth software (https://www.google.com/earth/), and the map was generated using SimpleMappr (Shorthouse 2010).

Pelecinus polyturator (Drury, 1773)  
(Figs. 1A-1E)

Material examined. 39♀ and 11♂. MEXICO. El Triunfo, Chiapas, 15°39’20S 92°48’42”W, 2100 masl, 2001, P. Kowarile coll. (2♀, 2♂, #0150787–0150790, UFES). PANAMA. Chiriquí: Renacimiento, Santa Clara, 1,200 masl, 20–22.v.1977, B.C. Ratcliffe coll. (2♀, 1♂, INPA).

BOLIVIA. Santa Cruz: Samaipata, 21–22.i.1989 (1♀, INPA). BRAZIL. Amazonas: Manaus, Campinas Biological Reserve, 3.iii.1977, N.D. Penny coll. (3♀, INPA); same locality, 1.ii.1975, N. Tangerini coll. (1♀, INPA); same locality, 14.i.1977 and 3.iii.1977, B.C. Ratcliffe coll. (4♀, INPA); same locality, 14.i.1977, N.D. Penny coll. (8♀, INPA); Manaus, Adolpho Ducke Forestry Reserve, 27.ii.1976, B. Mascarenhas coll. (1♀, INPA). ACRE: Bujari, FES Antimary, 09°20’01”S 68°19’17”W, 19.xi-3.xii.2016, Malaise trap, E.F. Morato & J.A. Rafael cols, Rede BIA, (1♂, INPA); Senador Guiomard, E. E. Catuaba, 10°04’28”S 67°37’00”W, 15-31.xii.2016, 740
Malaise trap, E.F. Morato & J.A. Rafael cols, Rede BIA, (1♀, INPA). **Maranhão:** Carolina, Marajá Farm, 07°15’40”S 47°22’48”W, 13.xii.2001, Malaise, F.L. Oliveira & J. Vidal cols. (1♂, INPA). **Alagoas:** Ibataguara, Usina Serra Grande, 08°59’58”S 35°51’34”W, 400 masl, 29.v.2007, J.A. Rafael & F.F. Xavier Filho cols. (1♀, INPA). **Minas Gerais:** Cambuquira, ii.1943, H.B. Lopes coll. (1♀, INPA); Alto Caparão, Caparão National Park, 20°30’05”S 41°49’16”W, 1465 masl, 07–14.iii.2013, Malaise, C.O. Azevedo & F.B. Fraga cols. (4♀, #0151784–0151787, UFES). **Espírito Santo:** Atitló Viváquva, Serra das Torres, 29°59’53”S 41°12’42”W, 14.iv.2007, C. Waichert coll. (1♀, #0063078, UFES); Ibitirama, Caparão National Park, 20°29’S 41°43’W, 10–14.iii.2016, Malaise trap, R. Kawada coll. (1♀, #0083350, UFES). **Rio de Janeiro:** Teresópolis, Serra dos Órgãos National Park, 22°26’15.0”S 42°56’15.0”W, 06–11.i.2005, Moericke trap, A.L.B.G. Peronti & eq. cols. (1♂, #0023497, UFES); same locality, 22°26’43”S 42°59’59”W, 26.vi.2014, B.F. Santos & B. Lassance cols. (2♀, #0151466–0151467, UFES). **São Paulo:** Campos do Jordão, ii.2005, L.B. Reis coll. (1♀, #0038482, UFES); Ribeirão Grande, Intervales State Park, Barra Grande, Anta trail, 10–13.xii.2000, Malaise trap, M.T. Tavares & eq. cols. (1♀, #0038481, UFES); São Carlos, E. E. Jataí, 21°37’S 47°48’W, 15.iii.2007, Malaise 02, N.W. Perioto e eq. (1♂, LRRP). **Paraná:** Colombo, EMBRAPA, 23.iii.1987 (1♀, #0038478, UFES); Ponta Grossa, Vila Velha, IAPAR Reserve, 02.v.1988 (1♀, #0038480, UFES); Telêmaco Borba, Samuel Klabin Reserve, 13.iv.1987 (1♀, #0038479, UFES); Ponta Grossa, 25°05’42”S 50°09’43”W, Phaseolus vulgaris L., 01.i.2002, B. Alleoni leg. (1♀, IBCBE). **Rio Grande do Sul:** Cascata, 10-18.i.2019, Nava D.E. & Scheunemann T. (1♂, INPA).

**Geographical records.** Here in, we provide new records for Acre, Maranhão (Amazon rainforest) and Espírito Santo (Atlantic rainforest) (Fig. 1E).

**Remarks.** Some females analyzed show different size and color pattern (mainly in the hindwings) (Figs. 1A, 1B, 1C). Variation like those was mentioned by Johnson & Musetti (1999), who verified that they are intraspecific. Although the material analyzed comes from entomological collections, which receive deposits of a large volume of specimens of insects from different projects, few specimens are present in these collections (01 IBCBE, 26 INPA, 01 LRRP and 21 UFES). According to Lara & Perioto (2014), for a more robust sampling, long-term studies and successive sampling can be an effective strategy to collect *P. polyturator*. With Malaise traps surveys, some long-term sampling in the same sampling area proved to be effective for capturing uncommon Hymenoptera families, such as Chrysididae, Dryinidae, Monomachidae and Sclerogibbidae (Lucena et al. 2012; Versuti et al. 2014; Perioto et al. 2016; Fernandes et al. 2017).

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Sousa et al.: New records of *Pelecinus polyturator* (Drury) for Brazil.

**Figure 1.** *Pelecinus polyturator* (Drury, 1773), habitus lateral. A. Female (State of Amazonas, Brazil). B. Female (State of Minas Gerais, Brazil). C. Female (State of Maranhão, Brazil). D. Male (State of Acre, Brazil). E. Distribution map (red dots = specimens studied; gray area = new state records).

**Authors’ Contributions**

A.F.A.S., A.C.N., M.T.T. and D.R.R.F. identified the material and wrote the manuscript. All authors have discussed the results and contributed to its final version.

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