ENTOMOLOGICAL Communications

Entomological Communications, 8, 2026: ec08046
doi: 10.37486/2675-1305.ec08046
e-ISSN: 2675-1305
Open Access Full Text Article

Scientific Note

First record of Pipunculidae (Diptera) from Uruguay

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Edited by: Danilo P. Cordeiro

Received: June 19, 2026. Accepted: October 13, 2026. Published: November 17, 2026.

Abstract. Pipunculidae (Diptera) is recorded from Uruguay for the first time. The family is represented in this country by three genera and six species: *Clistoabdominalis spinitibialis* (Hardy, 1954), *Eudorylas spinosus* (Hardy, 1948), *Tomosvaryella aurata* Ale-Rocha, 1996, *Tomosvaryella curta* Ale-Rocha, 1996, *Tomosvaryella longiseta* Ale-Rocha, 1996, and *Tomosvaryella platensis* Ale-Rocha, 1996.

Keywords: Big-headed flies, Endoparasitoid, Neotropics, Taxonomy.

Pipunculidae (big-headed flies) comprises 28 genera and 10 subgenera, currently with 1,668 valid species (Evenhuis & Pape 2026). The family occurs in all terrestrial ecosystems worldwide, except Antarctica (Rafael & Skevington 2010). The Latin American and Caribbean fauna includes 279 species cataloged by Rodriguez & Rafael (2012), plus 44 additional species recorded for Colombia (Ramos-Pastrana et al. 2026), for a total of more than 320 species.

Until recently (Marques et al. 2019), three South American countries had no published records of Pipunculidae: Suriname, French Guiana, and Uruguay. The family was recorded from French Guiana by Marques et al. (2019) and is now recorded from Uruguay, leaving Suriname as the only South American country without a pipunculid record.

The first records of Pipunculidae from Uruguay are based on 14 specimens received from Dr. Vitor Cezar Pacheco da Silva at the Facultad de Agronomía, Universidad de la República, Montevideo.

Fourteen pipunculid specimens from Uruguay were examined. Species identifications were made by JAR and RAR using taxonomic revisions and identification keys for *Clistoabdominalis* Skevington (Ramos-Pastrana et al. 2023), *Eudorylas* Aczél, 1940 (Rafael 1995), and *Tomosvaryella* Aczél, 1939 (Ale-Rocha 1992a; 1992b; 1993; 1996; Ale-Rocha & Rafael 1995; Ramos-Pastrana & Rafael 2021). All specimens were initially preserved in 70% ethanol and later dry-mounted on pins after dehydration using the modified amyl acetate (banana oil) technique of Rafael et al. (2023).

The specimens will be deposited in the Colección de Hexapoda de la Facultad de Ciencias de la Universidad de la República (URM), Montevideo, Uruguay. The abdominal apices were removed and macerated in hot 85% lactic acid (150°C) for about 30 minutes. They were then examined on cavity slides with glycerin. The pieces were subsequently stored in microvials containing glycerin.

Species records are presented as full label data, including the specific codes of sampling sites. The map of geographic distribution was created using QGIS software version 3.44.

The classification adopted here follows Motamedinia et al. (2022).

This is the first record of Pipunculidae from Uruguay. The 14 specimens examined belong to six identified species in three genera: *Clistoabdominalis*, *Eudorylas*, and *Tomosvaryella*.

Five female specimens could not be associated with males and were therefore identified only to the genus level, *Tomosvaryella*.

PIPUNCULINAE
Tomosvaryellini Hardy, 1943

According to Motamedinia et al. (2022), all genera treated here are currently placed in the tribe Tomosvaryellini.

Clistoabdominalis Skevington, 2001

Clistoabdominalis Skevington can be readily distinguished from the other genera of Tomosvaryellini Rafael & De Meyer, 1992 by the following features (Skevington & Yeates 2001): tergite 1 with a lateral fan of setae absent or minute; syntergosternite 8 swollen, without a membranous area or, when present, with a very small one; hypandrium deflected to the left at nearly 90° to the phallic guide; phallus trifid, with ducts distinctly separated only in the distal third; and ejaculatory apodeme large and funnel-shaped.

Clistoabdominalis spinitibialis (Hardy, 1954)

This species was characterized and illustrated by Rafael (1995) and by Ramos-Pastrana et al. (2023), the latter with good representative photos. It can be recognized by the combination of the following characters: Antenna brown to black, postpedicel acute, postpronotal lobe yellow, legs mainly black with inconspicuous ctenidia on fore and hind femora, fore and mid tibiae with stouter distal setae, wing with third costal section slightly shorter than fourth section, abdomen black, subshiny, gray pruinose on tergite 1 and laterally on the remainder tergites, tergite 1 without longer setae laterally, syntergosternite 8 large, around 1.5x longer than tergite 5 and with very small membranous area, surstyli subsymmetrical, ejaculatory apodeme funnel-shaped [see figures 14 to 26 on Ramos-Pastrana et al. (2023)].

Material examined. URUGUAY, Montevideo, Sayago, Predio Facultad de Agronomía, 15.iv.2003, Segada, sobre frutos caídos, B. Goñi / FCE Dip 2724 (1 male, URM); Salto, Parador, Quiroga, 6.x.1978, L.C. de Zolesti, E. Morelli & F. Rodrigues / FCE Pip 004 (1 male URM).

Geographical records (South America). Brazil (Amazonas, Mato Grosso, Bahia, Rio de Janeiro, São Paulo, Paraná, Santa Catarina); Bolívia (Beni); Argentina (Tucumán) (Rodríguez & Rafael 2012); Colombia (Ramos-Pastrana et al. 2023); French Guiana (Marques et al. 2019); Uruguay (Montevideo, Salto) **(new record)** (Fig. 1).

Eudorylas Aczél, 1940

Eudorylas is a highly heterogeneous genus and appeared paraphyletic in the analysis of Motamedinia et al. (2021), indicating the need for redefinition. As currently delimited, it has a cosmopolitan distribution and is widely distributed in the New World, ranging

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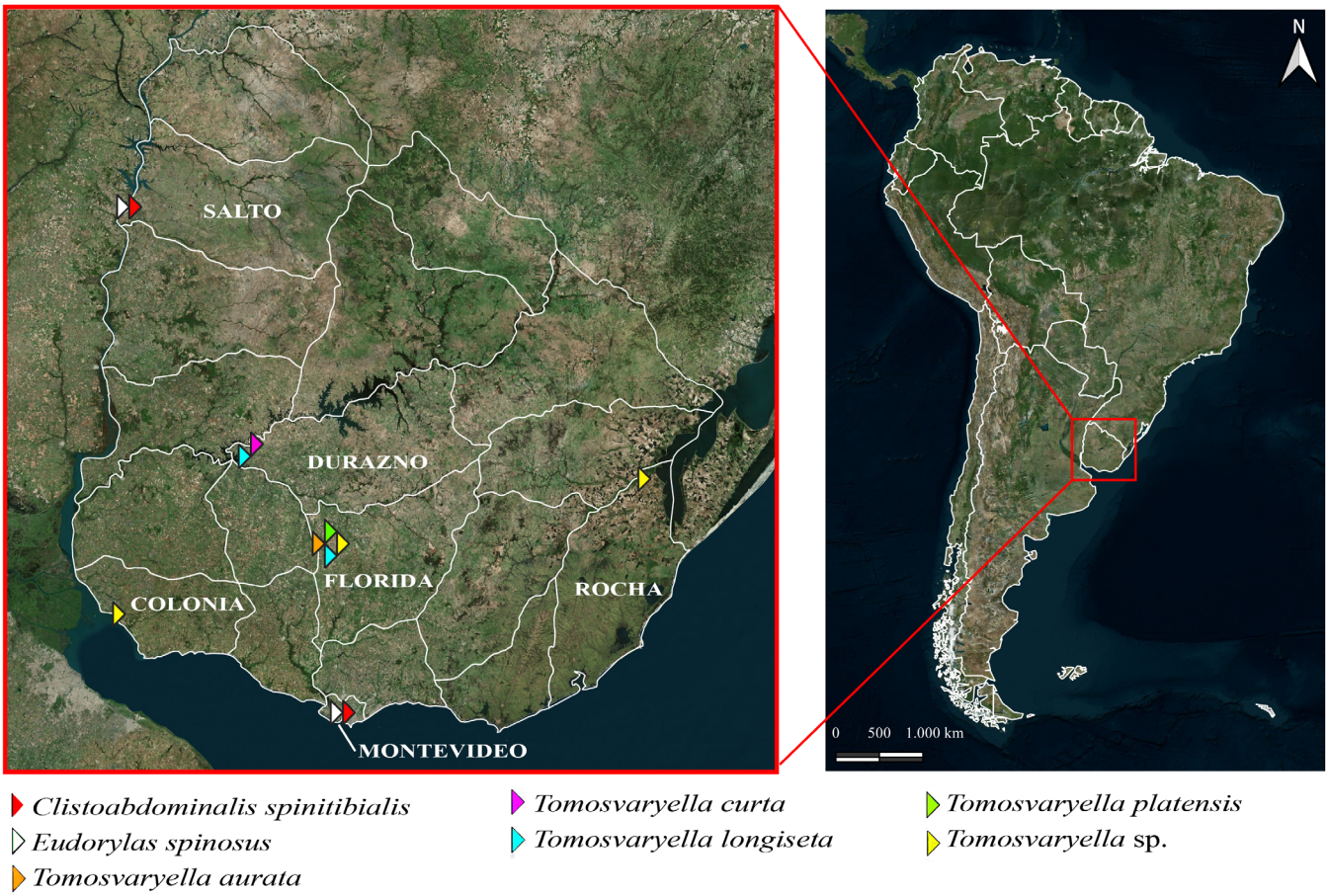


Figure 1. Geographical records of Pipunculidae in the Uruguayan departments. *Clistoabdominalis spinitibialis* (Hardy, 1954) and *Eudorylas spinosus* (Hardy, 1948) in Montevideo and Salto; *Tomosvaryella aurata* Ale-Rocha, 1996, *Tomosvaryella longiseta* Ale-Rocha, 1996, and *Tomosvaryella platensis* Ale-Rocha, 1996 in Florida; *Tomosvaryella curta* Ale-Rocha, 1996 and *T. longiseta* in Durazno; *Tomosvaryella* sp. in Florida, Colonia, and Rocha.

from Canada to Chile. The typical Neotropical species of *Eudorylas* were revised by Rafael (1990) under *Metadorylas* Rafael, 1987, now considered a junior synonym of *Eudorylas* (Skevington & Yeates 2001). The remaining heterogeneous species assigned to *Eudorylas* were revised by Rafael (1993) for Mexico and Central America and by Rafael (1995) for South America.

Eudorylas spinosus (Hardy, 1948)

This species was redescribed and illustrated by Rafael (1990) in *Metadorylas*, a junior synonym of *Eudorylas,* which was synonymized by Skevington & Yeates (2001). It can be recognized by the combination of the following characters: antenna with pedicel black, postpedicel, postpronotal lobes, femora and tibiae yellow, mid femur with ventral ctenidia, fore and mid tibiae with distal stouter setae, and at least tergites 3 to 5 shiny black.

Material examined. URUGUAY, Montevideo, Sayago, Predio Facultad de Agronomía, 17.iv.2001, Segada, B. Goñi / FCE PIP 002 (1 male, URM); Salto, Parador, Quiroga, 6.x.1978, L.C. de Zolesti, E. Morelli & F. Rodrigues / FCE PIP 002 (1 female URM).

Geographical records. México (Jalisco); Costa Rica; Granada; Trinidad; Colombia (Cundinamarca); Ecuador; Brazil (Amazonas, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul); Argentina (Salta, Tucumán, Santiago del Estero) (Rodriguez & Rafael 2012); Uruguay (Montevideo, Salto) (**new record**) (Fig. 1).

Tomosvaryella Aczél, 1939

Tomosvaryella is a cosmopolitan genus comprising small- to medium-sized species. It is considered monophyletic based on the absence of propleural setae, the absence of a pterostigma and the M_2 vein, and the transverse r-m vein positioned near the middle of the dm cell (Rafael & De Meyer 1992). In addition, the postpronotal lobe is yellow, and sternite 1 is divided in males. Species are differentiated mainly by the modified male hind trochanter, which bears ventral protuberances, spiniform processes, or setae, as well as by characters of the male genitalia and female ovipositor (Rafael & De Meyer 1992; Ale-Rocha & Souza 2011). Larvae of *Tomosvaryella* are strict endoparasitoids of leafhoppers (Cicadellidae, Deltocephalinae, Hemiptera), and the species typically occur in sunny, grass-dominated habitats where their hosts are abundant (Ale-Rocha & Souza 2011; Ramos-Pastrana & Rafael 2021). Neotropical species of *Tomosvaryella* were revised by Ale-Rocha (1992a; 1999b; 1993; 1996) and Ale-Rocha & Rafael (1995), including identification keys for species from Mexico and the Antilles. Subsequently, Ale-Rocha & Souza (2011) provided keys for South American species, and Ramos-Pastrana & Rafael (2021) studied the Colombian fauna.

Tomosvaryella aurata Ale-Rocha, 1996

This species can be recognized by the laterotergite with golden pruinosity, abdomen broad with lateral spots of silvery-gray pruinosity, hind trochanter bearing a long, slender spine (Fig. 4), fore tarsomere five with a basal projection on the ventral surface (Fig. 3), subsymmetrical surstyli (Figs. 36, 37), and phallic guide apex and ramifications of phallus short (all figures in Ale-Rocha & Souza 2011).

Material examined. URUGUAY, Florida, sitio 27, 33°41'36,5"S - 56°16'11,4"W, 15.xii.2009, Segada, E. Lorier., FCE 1879 (1 male, URM).

Geographical records. Argentina (Buenos Aires), Brazil (Amazonas) (Ale-Rocha 1996; Ale-Rocha & Souza 2011), Uruguay (Florida) (**new record**) (Fig. 1).

Tomosvaryella curta Ale-Rocha, 1996

This species can be recognized by the scutum and scutellum with developed setae, hind femur with elongated setae on the posterior surface, surstyli short and asymmetrical, the left one with a truncated apex, cerci elongated (Figs. 48, 49 in Ale-Rocha & Souza 2011), phallic guide with a long apex, lacking a long dorsal spine.

Material examined. URUGUAY, [Durazno], "Puerto Arenas" [Pueblo

de la Arena] del Río Negro, 1.iii.1981, Franca, Martínez & Salvatella, Trampa Shannon, FCE-PIP 003 (1 male, URM).

Geographical records. Chile, Argentina (Buenos Aires) (Ale-Rocha 1996; Ale-Rocha & Souza 2011), Uruguay (Durazno) (**new record**) (Fig. 1).

Tomosvaryella longiseta Ale-Rocha, 1996

This species can be recognized by syntergosternite 8 with a broad membranous area extending from apex to base (Fig. 61); hind trochanter with a short, flattened, semitransverse protuberance (Fig. 16); hind femur dilated with a fringe of long setae on the posterior surface (Fig. 15); bristly, asymmetrical surstyli (Figs. 59, 60), and phallic guide with elongated apex (all figures in Ale-Rocha & Souza 2011).

Material examined. URUGUAY, Florida, sitio 27, 33°41'36,5"S - 56°16'11,4"W, 15.xii.2009, Segada, E. Lorier, FCE 1879 (1 male, URM); [Durazno], "Puerto Arenas" [Pueblo de la Arena] del Río Negro, 1.iii.1981, Franca, Martínez & Salvatella, Trampa Shannon, FCE-PIP 003 (1 male, URM).

Geographical records. Argentina (La Plata, Buenos Aires, Santiago del Estero, Salta, Catamarca), Paraguay (San Pedro) (Ale-Rocha 1996; Ale-Rocha & Souza 2011), Uruguay (Florida, Durazno) (**new record**) (Fig. 1).

Tomosvaryella platensis Ale-Rocha, 1996

This species can be recognized by the scutum and scutellum with developed setae, hind trochanter simple, truncated, non-protuberant (Fig. 24), left surstylus strongly concave in lateral view (Fig. 78), distinctly longer than the right (Figs. 76, 77), phallic guide long with long dorsal spine (Fig. 79) (all figures in Ale-Rocha & Souza 2011).

Material examined. URUGUAY, Florida, sitio 27, 33°41'36,5"S - 56°16'11,4"W, 15.xii.2009, Segada, E. Lorier., FCE 1879 (1 male, URM).

Geographical records. Argentina (La Plata, Buenos Aires) (Ale-Rocha 1996; Ale-Rocha & Souza 2011), Uruguay (Florida) (**new record**) (Fig. 1).

Unidentified *Tomosvaryella* female specimens:

URUGUAY, Florida, sitio 27, 33°41'36,5"S - 56°16'11,4"W, 15.xii.2009, Segada, E. Lorier. (FCE 1879) (3 female, URM); Colonia, Arroyo Limetas, 10.i.1962, campo aberto, vegetação alta, C.S. Carbonell (FCE-DIP 001) (1 female, URM); Rocha, Punta Cebollati, Laguna Merim, 23.ii.1962, segando vegetación bañado seco, C.S. Carbonell & L.C. de Zoiesti (2577) (1 female, URM).

This short list, comprising only six species of big-headed flies from Uruguay, certainly underrepresents the family's true diversity in the country. In addition, the available material is limited to six departments (Salto, Durazno, Florida, Rocha, Colonia, and Montevideo), mainly in the south of the country (Fig. 1). The Uruguayan fauna is therefore likely to be much richer in both species and genera, but these records represent an important first step toward filling this distributional gap, especially considering that pipunculids are usually under-represented in collections and that only a few specialists currently work on the family.

Acknowledgments

We thank Dr. Vitor Cezar Pacheco da Silva and Matilde Panzera, Facultad de Agronomía, Universidad de la República, Montevideo, for loaning pipunculid specimens.

Funding Information

Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) research fellowship to JAR (process 306661/2021-7 and PROTAX, process 444180/2024-9) and to RAR (process 312351/2021-6). This research was supported by Fundação de Amparo à Pesquisa do Estado do Amazonas (FAPEAM) through the POSGRAD and FIXAM programs, and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), PROAP program, finance code 001, and research grant (process: 88887.275353/2026-00) to CRG.

Authors' Contributions

JAR: Conceptualization, Validation, Funding acquisition, Writing - original draft, Writing - review and editing; CRG: Writing - review and editing; RAR: Funding acquisition, Writing - review and editing.

Conflict of Interest Statement

The authors declare no conflict of interest.

Ethical Approval

Not applicable.

Data Availability

The voucher material used for this study was provided on loan only and belongs to entomological collections of Universidad de la República, Montevideo (URM).

Generative AI Statement

The authors declare that artificial intelligence tool (Grammarly) were used only for grammatical correction of the text. The AI tool did not contribute to the study design, data analysis, interpretation of results, or scientific conclusions. All content was reviewed and approved by the authors, who take full responsibility for the manuscript.

References

Ale-Rocha, R. (1992a) Descrição de *Tomosvaryella pulchra* sp. nov. (Diptera, Pipunculidae). *Boletim do Museu Paraense Emílio Goeldi, Série Zoologia*, 8: 315–318.

Ale-Rocha, R. (1992b) Redescrição de *Tomosvaryella galapagensis* (Curran 1934) (Diptera, Pipunculidae). *Boletim do Museu Paraense Emílio Goeldi, Série Zoologia*, 8: 319–321.

Ale-Rocha, R. (1993) Redescrição e considerações sobre a distribuição geográfica de *Tomosvaryella lepidipes* Hardy, 1943 e (1993) descrição de *Tomosvaryella venezuelana* sp. nov. (Diptera, Pipunculidae). *Revista Brasileira de Entomologia*, 37: 263–266.

Ale-Rocha, R. (1996) Revisão das espécies de *Tomosvaryella* Aczél da América do Sul (Diptera, Pipunculidae). *Revista Brasileira de Entomologia*, 40: 165–187.

Ale-Rocha, R.; Rafael, J. A. (1995) *Tomosvaryella* Aczél do México, América Central e Antilhas (Diptera, Pipunculidae). *Revista Brasileira de Zoologia*, 12(2): 407–427. doi: 10.1590/s0101-81751995000200017

Ale-Rocha, R.; Souza, B. B. (2011) Espécies novas de Tomosvaryella Aczél (Diptera: Pipunculidae) da Argentina e chave para as espécies sul-americanas. *Revista Brasileira de Entomologia*, 55(3): 287–298. doi: 10.1590/s0085-56262011005000025

Evenhuis, N. L.; Pape, T. (2026) Pipunculidae Walker, 1834. Systema Dipterorum: The BioSystematic Database of World Diptera. Access on: vi.2026. doi: 10.48580/d3bz

Marques, D. W. A.; Rafael, J. A.; Pollet, M. (2019) First records of Pipunculidae (Diptera) from French Guiana, with the description of a new species. *Zoosystema,* 41(sp1): 249–258. doi: 10.5252/zoosystema2019v41a13

Motamedinia, B.; Skevington, J. H.; Kelso, S.; Kelmahier, C. (2022) The first comprehensive, multigene molecular phylogeny for big-headed flies (Diptera: Pipunculidae). *Zoological Journal of the Linnean Society*, 195(4): 1200–1218. doi: 10.1093/zoolinnean/zlab094

Rafael, J. A. (1990) As espécies neotropicais de *Metadorylas* Rafael (Diptera: Pipunculidae). *Boletim do Museu Paraense Emílio Goeldi, série Zoologia*, 6(2): 127–164.

Rafael, J. A. (1993) Espécies de *Eudorylas* Aczél (Diptera, Pipunculidae) do México e América Central. *Revista Brasileira de Entomologia,* 37(4): 751–762

Rafael, J. A. (1995) Espécies de *Eudorylas* Aczél (Diptera, Pipunculidae) da América do Sul. *Revista Brasileira de Entomologia*, 39(4): 793–838.

Rafael, J. A.; De Meyer, M. (1992) Generic classification of the family Pipunculidae (Diptera): a cladistic analysis. *Journal of Natural History*, 26(3): 637–658. doi: 10.1080/00222939200770391

Rafael, J. A.; Skevington, J. H. (2010) Pipunculidae (big-headed flies). In: Brown, B. V.; Borkent, A.; Cumming, J. M.; Wood, D. M.; Woodley, N. E.; Zumbado, M. A. (Eds.), *Manual of Central American Diptera, Volume 2,* pp. 793-803. Ontario: Canada: NRC Research Press.

Rafael, J. A.; Marques, D. W. A.; Limeira-de-Oliveira, F. (2023) Insect (Hexapoda) diversity in the oceanic archipelago of Fernando de Noronha, Brazil: Clusiidae (Diptera). *Zootaxa* 5353(4): 332–350. doi: 10.11646/zootaxa.5353.4.2

Ramos-Pastrana, Y.; Rafael, J. A. (2021) *Tomosvaryella* Aczél (Diptera: Pipunculidae) of Colombia, with description of two new species. *Zootaxa*, 4985(1): 37–68. doi: 10.11646/zootaxa.4985.1.2

Ramos-Pastrana, Y.; Marques, D. W. A.; Rafael, J. A. (2023) *Clistoabdominalis* Skevington, 2001 (Diptera: Pipunculidae) of Colombia, with description of a new species and an updated key to males of the Neotropical species. *Zootaxa*, 5325(1): 30–40. doi: 10.11646/zootaxa.5325.1.2

Ramos-Pastrana, Y.; Córdoba-Suarez, E.; Wolff, M. (2026) Two new species of *Pipunculus* Latreille, 1802 (Diptera: Pipunculidae) from Colombia, and an updated key to males of the Neotropical species. *Zootaxa*, 5741(2): 309–324. doi: 10.11646/zootaxa.5741.2.4

Rodriguez, H. C.; Rafael, J. A. (2012) *Pipunculidae (Diptera) of Latin America and the Caribbean: a catalogue of species with notes on biology and pipunculid-hosts associations*. Lambert Academic Publishing.

Skevington, J. H.; Yeates, D. K. (2001) Phylogenetic classification of Eudorylini (Diptera, Pipunculidae). *Systematic Entomology*, 26(4): 421–452. doi: 10.1046/j.0307-6970.2001.00160.x