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New record of *Latheticomyia peruana* Marques & Rafael (Diptera: Cypselosomatidae) from the Colombian Andean-Amazon region, with remarks on intraspecific variation

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ABSTRACT

We report the first record of *Latheticomyia peruana* Marques & Rafael, 2016 in Colombia, based on three males collected using a Malaise trap in a dense secondary forest in a mountainous ecosystem in the locality of Vereda El Jardín del Bosque, municipality of Florencia-Caquetá, at an altitude of 1139 m.a.s.l. This finding constitutes the first record of the genus *Latheticomyia* in Colombia and considerably extends the known distribution of *L. peruana* -- previously known only from its type locality in Quincemil, Cusco, Peru -- by approximately 1745 km northward to the Colombian Andean-Amazon region. In addition, we report intraspecific variation in colour, size and reproductive structures among the specimens in Peru and Colombia.

KEY WORDS: diversity, Nerioidea, Neotropical region, taxonomy

Nuevo registro de *Latheticomyia peruana* Marques & Rafael (Diptera: Cypselosomatidae) en la región Andino-Amazónica de Colombia, con observaciones sobre la variación intraespecífica

RESUMEN

Presentamos el primer registro de *Latheticomiya peruana* Marques & Rafael, 2016 en Colombia, basado en tres machos recolectados mediante una trampa Malaise en un bosque secundario denso, ubicado dentro de un ecosistema montañoso en la localidad de Vereda El Jardín del Bosque, municipio de Florencia (Caquetá), a una altitud de 1139 m s. n. m. Este hallazgo constituye el primer registro del género *Latheticomyia* en Colombia y amplía considerablemente la distribución conocida de *L. peruana* -- que hasta ahora solo se conocía en su localidad tipo en Quincemil, Cusco, Perú -- en aproximadamente 1745 km hacia el norte, hasta la región Andino-Amazónica Colombiana. Además, informamos sobre la variación intraespecífica en el color, el tamaño y las estructuras reproductivas entre los especímenes de Perú y Colombia.

PALABRAS CLAVE: diversidad, Nerioidea, región Neotropical, taxonomía

Cypselosomatidae (Diptera: Acalyptratae: Neroidea) are small to medium-sized acalyptrate flies, with body length ranging from 1.5 to 5.0 mm (Marques and Rafael 2016; Yau *et al*. 2026). Cypselosomatidae was recently reclassified by Yau *et al*. (2026) to include the former Pseudopomyzidae. The latter has a long and highly controversial taxonomic history, which was recently summarized by Yau *et al*. (2026). These authors conducted a phylogenetic study and recovered Pseudopomyzidae as a paraphyletic group within the Cypselosomatidae *s.l*. They also emphasized the need to redefine the latter before any classificatory rank either group. They are found worldwide, except in the Afrotropical region, and occur across a wide range of elevations. They are generally uncommon, little studied and their natural history is poorly understood (McAlpine and Shatalkin 1998). However, some species have been reported on different substrates, including cut hardwood stumps and decomposing plant material (Frey 1952; Harrison 1976; Krivosheina 1979; Roháček 1981; Krivosheina 1984; Schacht 1997; Papp 1998; McAlpine and Shatalkin 1998; Stuke 2009; Belgers 2010; Roháček 2012a, 2012b; Yau *et al*. 2026). Other authors have reported them in seabird nests and carrion; near seal or sea lion wallows;

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fowl yard (Harrison 1976); dunes densely penetrated by the burrows of penguins [*Eudyptula minor* (Foster, 1781)], shearwaters (*Puffinus* sp.) (McAlpine 2019) and around small vertebrate carcasses (McAlpine and Shatalkin 1998).

Latheticomyia is a small genus with seven described species, three described by Wheeler (1956): *L. infumata* (Nicaragua); *L. lineata* (United States of America) and *L. tricolor* (North America); two described by Hennig (1969): *L. longiterebra* (Peru); and *L. rotundicornis* (Mexico); and two described by Marques and Rafael (2016): *L. peruana* (Peru) and *L. xantha* (Peru). The natural history of *Latheticomyia* species is poorly understood. However, Yau *et al*. (2026) observed adults being attracted to small dung deposits and bird droppings in Bolivia and Costa Rica, and some species (*L. tricolor* and *L. lineata*) were collected in banana-baited trap cans set out for *Drosophila* (Wheeler 1956). Yau *et al*. (2026) report that some specimens in the University of Guelph Insect Collection were caught in dung-baited traps intended for Sphaeroceridae, but most specimens observed were collected by sweeping or Malaise traps, often at elevations above 1000 m.

To date, only the widely distributed *Pseudopomyza nigrimana* (Hennig) has been recorded for Colombia (Antioquia, Bogotá, Cauca and Valle del Cauca (Yau *et al*. 2026). Therefore, this the first record of *Latheticomyia* in Colombia. *Latheticomyia peruana* is presently known from 70 male specimens collected in a Peruvian Andean-Amazonian transitional ecosystem (Marques and Rafael 2016). The same applies to the new specimens, which were also collected in an Andean-Amazon transitional ecosystem, but in Colombia. Here we report this species in a mountainous ecosystem in Colombia, thus representing the first record of *L. peruana* for the country. In addition, we report intraspecific variation in colour, size and reproductive structures among the specimens in Peru and Colombia. Three specimens were collected using a Malaise trap set up over a small stream during an entomological expedition conducted to the Pava Negra Private Nature Reserve, in the municipality of Florencia, Caquetá, located in the Colombian Andean-Amazonian region (1º37′03″N, 75º37′03″W). The area is characterized by a mean annual rainfall of 3,840 mm, with a dry season from September to February, and a rainy period from March to August (IGAC 2010).

All collected specimens were brought to the Entomology Laboratory of Universidad de la Amazonia, where specimens of *L. peruana* were sorted, sexed, and identified to species level using the keys proposed by Marques and Rafael (2016) and Yau *et al*. (2026). Morphological characteristics were observed with an Olympus SZ2-ILST stereomicroscope. Terminology follows Cumming and Wood (2017). The specimens of *L. peruana* were deposited in the Entomological Collection of the Universidad de la Amazonía (LEUA) (National Registry of Collections 270), in Florencia, Caquetá, Colombia. Photographs were taken with a Leica digital camera DFC450 coupled to a Leica M205A stereomicroscope and connected to a computer with Leica Application Suite software, with an automatic mounting module (synchronization software) (http://www.syncroscopy.com/syncroscopy/). The map showing the geographic record of this species was plotted using the SimpleMappr software (Shorthouse 2010).

Latheticomyia peruana Marques & Rafael, 2016

(Figures 1–2)

Diagnosis. Male. Eyes subcircular (Figure 1a,b). Ocellar triangle dark brown, with a pair of strong ocellar setae (Figure 1c,d). Scutum dark brown, except for a V-shaped yellow area, which does not reach transverse suture but extends to scutellum (Figure 1e). Hind tibia entirely brown (Figure 1a). All tarsomeres brown (Figure 1a). Wing hyaline, with base of costal vein with 2 stout bristles before humeral weakening and 2 before subcostal break, the latter weaker (Figure 1f). Tergites covered with black bristles (Figure 1g). Male sternite 6 large, bilobed, somewhat 8-shaped, deeply concave anteriorly and posteriorly, convex laterally (Figure 2a). Epandrium brown, elongate, covered with many black setulae (Figures 2b,c). Surstyli with rounded apex, elongated and simple (Figure 2d-f). Cercus with an elongated apex in posterior view, bifid (Figure 2e). Hypandrium large, somewhat straight, each arm distant from each other (Figure 2g). Ejaculatory apodeme needle-shaped, entirely sclerotized, with sinuous margins and a slightly rounded apex (Figure 2h). Phallus long and slender (Figure 2i). Distiphallus coiled twice into a complete circle distally, somewhat membranous distally (Figure 2i).

Intraspecific variation. Marques and Rafael (2016) provided a complete description and illustration for the holotype; but we provide here a comparison of the size, colour and reproductive structure' variations between the Colombian and Peruvian male specimens. Body length with 2–2.3 mm, *versus* 2.8 mm in the holotype (Figure 14 in Marques and Rafael 2016); hind tibia entirely brown (Figure 1a), *versus* hind tibia brown with base yellow in the holotype (Figure 14 in Marques and Rafael 2016); all tarsomeres brown (Figure 1a), *versus* mid and hind tarsomeres yellow in the holotype (Figure 14 in Marques and Rafael 2016); syntergosternite 7+8 entirely dark brown with a row of black setae posteriorly (Figure 2b), *versus* syntergosternite 7+8 brown with a narrow yellow band posteriorly and a few sparsely scattered setulae in the holotype (Figure 19 in Marques and Rafael 2016); ejaculatory apodeme entirely sclerotized, with sinuous margins and a slightly rounded apex (Figure 2i), *versus* ejaculatory apodeme with slightly straight margins and slightly truncated, membranous apex in the holotype (Figure 27 in Marques and Rafael 2016).

New distributional record. Colombia, Caquetá, Florencia, Vda.[Vereda] El Jardin del Bosque, Reserva Natural Pava Negra, Reserva Forestal de la Amazonia, 01º42′44″N/75º44′09″W, 1139 m[eters], 22–24.Sep[IX].2024, Y. Ramos-Pastrana leg.

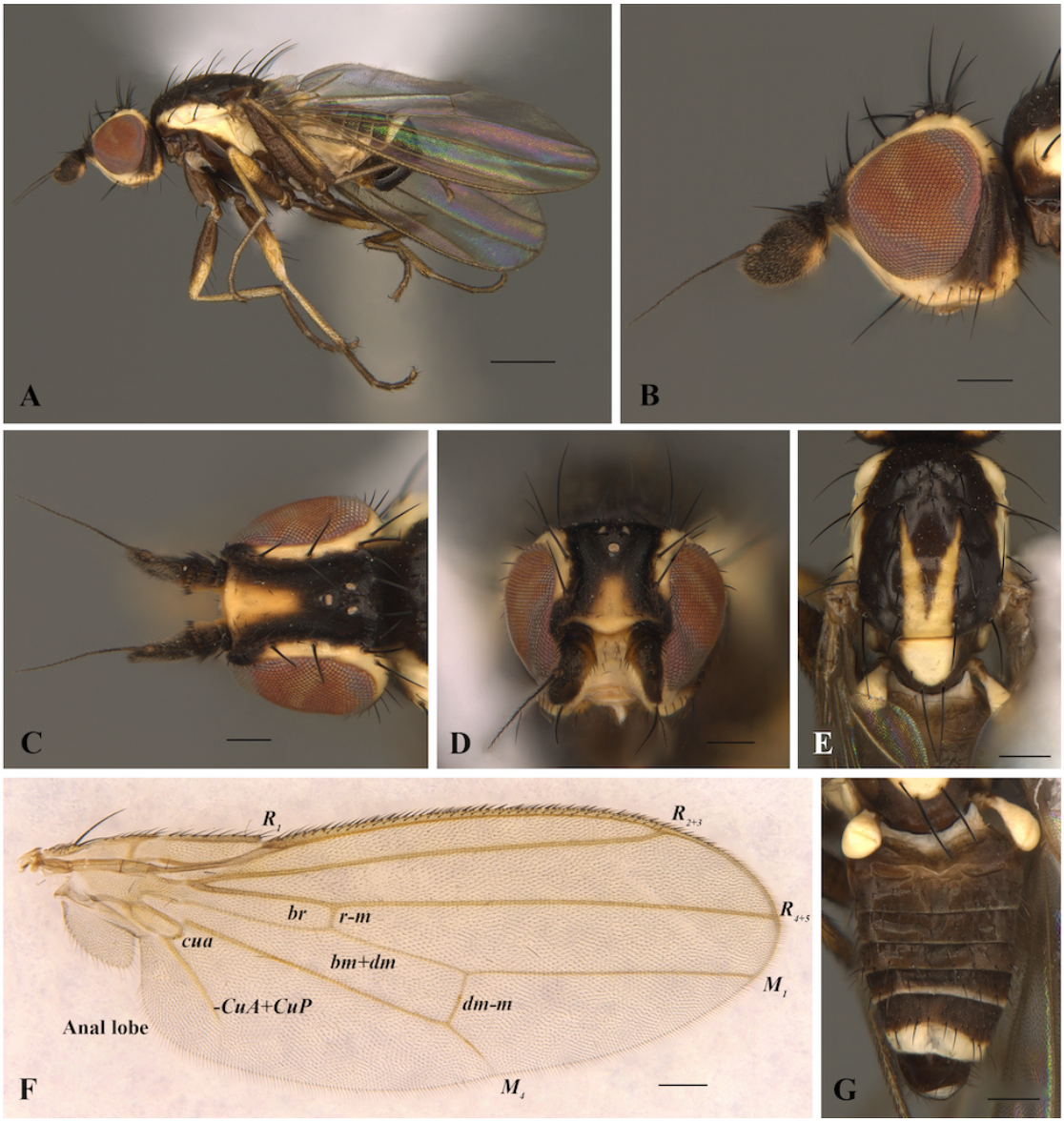


Figure 1. Adult male of *Latheticomyia peruana* Marques & Rafael, 2016 (LEUA-23921). **A** – habitus, left lateral view; **B** – head, left lateral view; **C** – head, dorsal view; **D** – head, frontal view; **E** – thorax, dorsal view; **F** – wing; **G** – abdomen, dorsal view. Abbreviations: *br*: basal radial cel; *bm+dm*: discal medial + basal medial cell; *CuA+CuP*: anterior branch of cubital vein + posterior branch of cubital vein; *cua*: anterior cubital cell; *dm-m*: discal medial crossvein; M_1: first branch of media; M_4: fourth branch of media; *r-m*: radial medial; R_1: anterior branch of radius; R_{2+3}: second branch of radius; R_{4+5}: third branch of radius. Scale bars: A = 0.3 mm; B-G = 0.1 mm.

(1 ♂ LEUA-23921) (photographed specimen) / Captura con trampa Malaise en bh-T [Bosque húmedo tropical] (Vegetación secundaria), *idem* (2 ♂, LEUA-23922, LEUA-23923) (Figure 3a).

Geographical distribution. According to the biogeographic regions proposed by Morrone *et al*. (2022) the Neotropical species *L. peruana* and *L. xantha* are known from the Yungas ecoregion transition from the Andes to the lowland Amazon rainforest of Peru at 874 meters above sea level (m. a.s.l) (Quincemil, Cuzco) (Marques and Rafael 2016) (Figure 3a). The new distributional record for the species is in the Napo moist forest ecoregion at 1139 (m. a.s.l). on the Colombian Andean-Amazon, Caquetá, Florencia, Vereda El Jardín del Bosque (Figure 3).

Our study represents an expansion of the geographic distribution of *L. peruana* by approximately 1745 km (in a straight line) to the northwest from their type locality, representing its point closest to the equator. From this perspective, it appears that *Latheticomyia* is a genus that is widely distributed, though rare within the Neotropical lowlands. However, this may also be simply due to the existence of unidentified material in collections or to the failure to apply appropriate collection methods, in the appropriate habitats. Some groups of flies occupy very specific microhabitats or

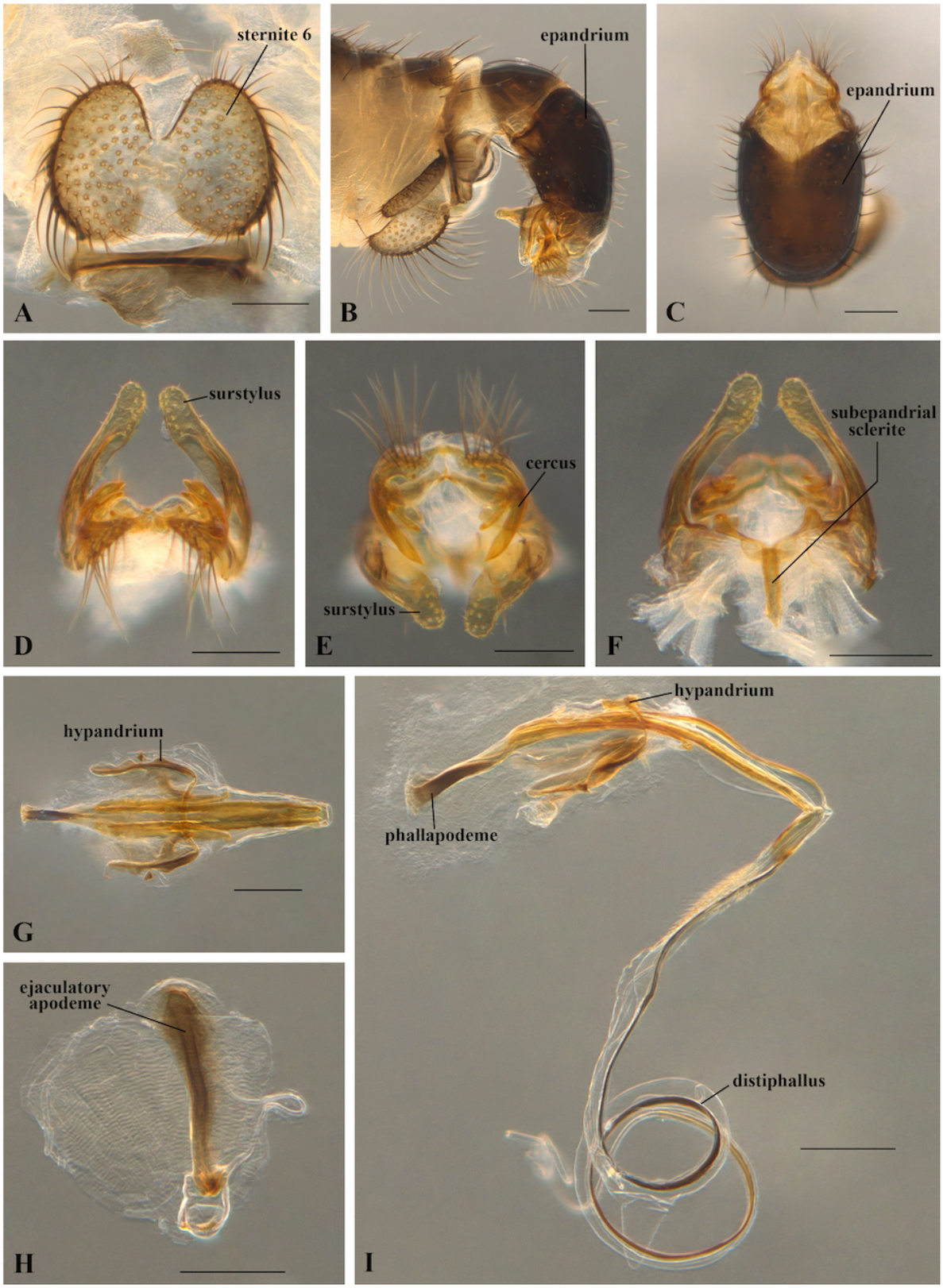


Figure 2. Adult male of *Latheticomyia peruana* Marques & Rafael, 2016 (LEUA-23921). **A** – sternite 6, ventral view; **B** – terminalia left lateral view; **C** – epandrium, cerci and surstyli, ventral view; **D** – cerci and surstyli, ventral view; **E** – cerci and surstyli, posterior view; **F** – surstyli and subepandrial sclerite, dorsal view; **G** – hypandrium and phallapodeme, ventral view; **H** – ejaculatory apodeme; **I** – hypandrium, phallapodeme and phallus, lateral view. Scale bar = 0.1 mm.

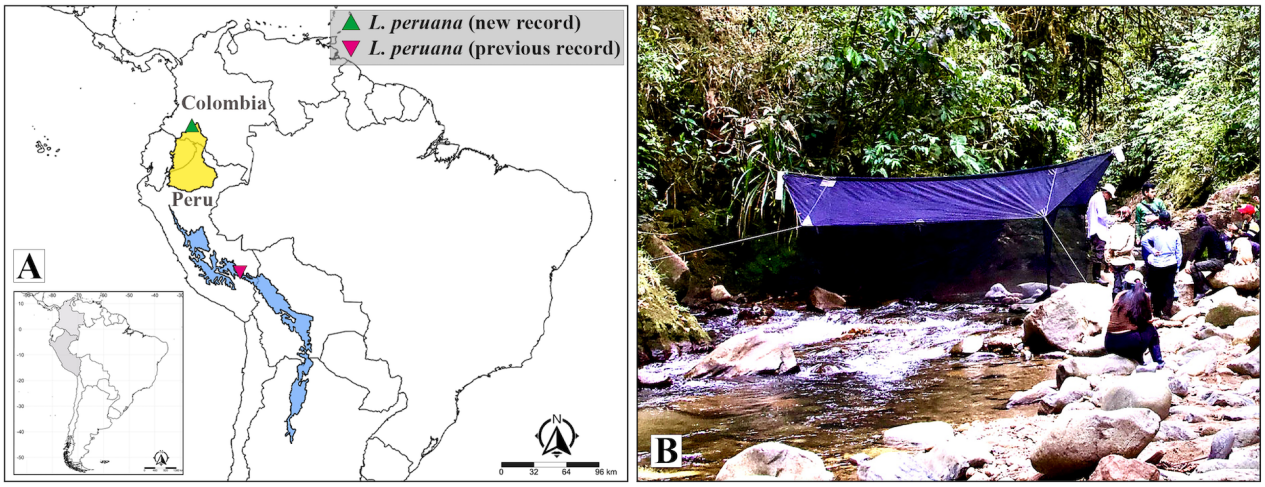


Figure 3. A – Geographical distribution of *Latheticomyia peruana* Marques & Rafael, 2016, including the biogeographic provinces of the Neotropical regions (Morrone *et al*. 2022): Napo province (yellow region), Yungas province (blue regions); **B** – Malaise trap stretched across small stream in habitat of *Latheticomyia peruana* in Colombia.

exhibit particular behavioural patterns that make them difficult to collect. For the time being, our record now extends their presence to the habitats of the mountain foothill.

This is the second genus from the former family Pseudopomizydae (now Cypselosomatidae) to be recorded in Colombia. Currently, the genus *Latheticomyia* comprises seven species (Yau *et al*. 2026). However, these authors report an ongoing work in the process of describing 16 new species of *Latheticomyia*. Similary, we anticipate that further review of Colombian collections and new field expeditions will lead to the discovery of additional *Latheticomyia* species and other Cypselosomatidae genera, potentially representing new taxa.

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