Description of *Pintomyia (Pifanomyia) brazilorum* sp. nov. a new fossil species from the Dominican Republic (Diptera: Psychodidae: Phlebotominae)

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A sand fly fossil was found in amber, a vegetal resin, which allows all the external phlebotomine structures to be seen. The piece that contains the new species is 14 mm long × 8 mm wide × 3 mm high. All the structures from the head, thorax, and abdomen were examined under the microscope and measured with a calibrated micrometric eye-piece. The morphological aspects of the new species suggest its inclusion in the Pintomyia *genus,* Pifanomyia *subgenus though it is not possible to include it in any of the series known for this subgenus. The presence of two atrophied spines on the gonostyles and gonocoxites without tufts of setae permit the exclusion of the new species from the other species of the subgenus* Pifanomyia. *The new species is named* Pintomyia (Pifanomyia) brazilorum *sp. nov.*

Key words: *Pintomyia brazilorum* - amber - fossil - Phlebotominae

The fossil record of sand flies strongly support that living genera existed long before the Oligocene (Andrade Filho & Brazil 2003). Sand fly fossils are found in amber, a vegetal resin, which allows all the external phlebotomine structures to be seen. There are a few records of sand flies in amber and so far, three fossil species of the Phlebotominae subfamily have been described for the Americas (Quate 1963, Brazil & Andrade Filho 2002, Andrade Filho et al. 2004).

The amber from the Dominican Republic is to be dated in the Miocene period, of 15-20 million years ago (Iturralde-Vinent & MacPhee 1996) and the piece that contains the specimen of the new species is 14 mm long × 8 mm wide × 3 mm high. All the structures of the head, thorax, and abdomen were examined under microscope and measured with a calibrated micrometric eye-piece. Measurements are given in micrometers. It was only possible to obtain measurements of a few of the structures.

The classification utilized is that proposed by Galati (2003). The new species is named *Pintomyia (Pifanomyia) brazilorum* sp. nov., in honour of Beatriz and Reginaldo Brazil, for their contribution to research on phlebotomine sand flies.

Pintomyia (Pifanomyia) brazilorum sp. nov.

Holotype (Figs 1 and 2)

Head: laid on its side, hindering measurement of the head. Palpomeres measuring: 1st - 24, 2nd - 106, 3rd - 130, 4th - 98, 5th - 300. The 5th palpomere is longer than the sum of 2nd + 3rd or 3rd + 4th. Antennomeres: AXV longer than AXVI. Ascoid simple, short, reaching the middle of the flagellomere, without any posterior spur. Newstead's spines and papillae not visible.

Thorax: proepimeral and anepisternal bristles were not to be observed. Wing: width measuring 333 and R5 966; it was impossible to obtain any other measurements. Legs without special characters. Anterior: femur 588, tibia 611, tarsomere I 377; tarsomeres II+III+IV+V 511. Posterior: it was impossible to measure the femur because it was deformed, tibia 888, tarsomere I 544. Tarsomeres II+III+IV+V 644.

Abdomen: gonostyles present four spines, two of them being thick: one of them terminal and the superior external one implanted in the apical third, the other two are atrophied: the inferior external one in the middle of the structure and the internal one in its basal third. Gonocoxites without tufts of setae. Parameres present small apical extension their ventral margins. The lateral lobes do not present any special structures and their length was impossible to measure, due to their position.

Type material: holotype, Dominican Republic, north Santiago, specimen in amber from the mid-Miocene period, deposited in the phlebotomine sand fly collection of the Centro de Pesquisas René Rachou (Fundação Oswaldo Cruz), Belo Horizonte, MG, Brazil.

Fig. 1: *Pintomyia (Pifanomyia) brazilorum* sp. nov. General aspects.

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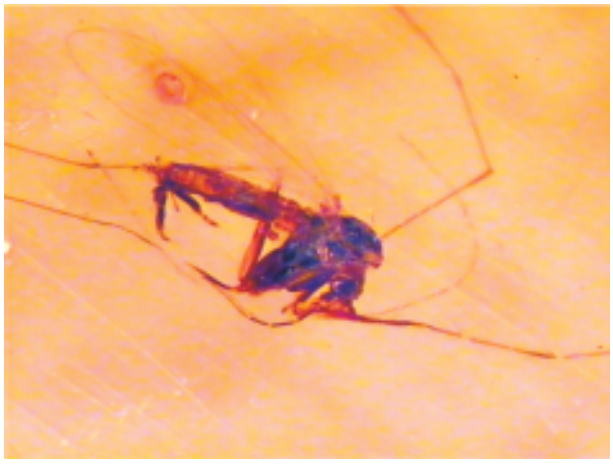

Fig. 2: *Pintomyia (Pifanomyia) brazilorum* sp. nov. in Dominican amber.

REMARKS

The observable structures allow the inclusion of this new species in the genus *Pintomyia* Lima 1932, which is consists of two subgenera: *Pintomyia* s. str. and, *Pifanomyia* Ortiz & Scorza, 1963. Due to the absence of spines on the posterior femur, this new taxon has been identified as belonging to *Pifanomyi*a. However, it is not possible to include it in any of the series known for this subgenus: *monticola*, *pacae*, *pia*, *evansi*, *verrucarum*, *serrana* or *townsendi*.

The presence of two atrophied spines on the gonostyles excludes the new species from that of the *pacae*, *monticola*, *pia*, *verrucarum*, *evansi* or *townsendi* series, as also from the *serrana* series, because the species of this latter series present basal tuft of setae on the gonocoxites. Further, in the *serrana* series, although the internal spine of the gonostyle is atrophied, the inferior external spine is absent. The atrophied spine also separated the new species from *Pintomyia falcaorum* Brazil & Andrade Filho, 2002, another fossil described from Dominican amber (Brazil & Andrade Filho 2002).

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