A NEW PHLEBOTOMINE FOSSIL SPECIES *TRICHOPYGOMYIA KILICKORUM* SP. N. (DIPTERA: PSYCHODIDAE) FOUND IN THE DOMINICAN REPUBLIC AMBER

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Summary:

A description is given of male sandfly found in a piece of amber from Dominican Republic that dates from the Miocene period (20-15 m.y.a). It is assigned to the genus *Trichopygomyia* Barreto. The position of the spines on the style and the shape of the dorsal lobes of the paramere separate this fly from other species of the genus: it is here named *Trichopygomyia kilickorum* sp. n.

KEY WORDS: phlebotomine, fossil, amber, *Trichopygomyia kilickorum* sp. n.

Résumé : UNE NOUVELLE ESPÈCE DE PHLÉBOTOME FOSSILE, *TRICHOPYGOMYIA KILICKORUM* SP. N. (DIPTERA: PSYCHODIDAE), DÉCOUVERTE DANS DE L'AMBRE EN RÉPUBLIQUE DOMINICAINE

Une description est donnée d'un phlébotome mâle découvert dans un morceau d'ambre de la République Dominicaine datant du miocène (20-15 millions d'années). Il est assigné au genre *Trichopygomyia* Barreto. La position des épines sur le style et la forme des lobes dorsaux du paramère séparent ce phlébotome des autres espèces du genre : il est nommé ici *Trichopygomyia kilickorum* sp. n.

MOTS CLÉS : phlebotome, fossile, ambre, *Trichopygomyia kilickorum* sp. n.

INTRODUCTION

The amber from Dominican Republic is tentatively dated as belonging to the Miocene period with 15-20 million years old (Iturralde-Vicent & MacPhee, 1966) and many insects are found in this amber, among them several Phlebotominae sandflies (Young & Lawer, 1987; Poinar & Poinar, 1999). Up to now, only two fossil species from this subfamily have been described in the Americas, *Micropygomyia paterna* (Quate, 1963) from Mexico amber, and *Pintomyia falcaorum* Brazil & Andrade Filho, 2002, from Dominican Republic.

More recently we received a piece of amber with an unknown sandfly species that we describe here.

MATERIALS AND METHODS

The amber piece containing the new sandfly species is oval, measuring 24 by 20 mm, holding three other flies and one coleopteran. The sandfly was measured in a binocular Olympus CH2

microscope with the aid of a micrometer objective and the drawings were realised with this same microscope adapted with a camera lucida. All the measurements of this new species are given in micrometers and the classification is that proposed by Galati (1995).

The new species is named *Trichopygomyia kilickorum* sp. n. in honor of Mireille and Robert Killick-Kendrick for their great contribution in the research of phlebotomine sandflies.

TRICHOPYGOMYIA KILICKORUM SP. N. (Fig. 1)

Holotype (male): sandfly of small size with total body size length 1,575, notum pale brown but coloration of the pleura not observed with clarity. Paired appendage complete except for antennae.

Head: laid on its side, this impeding the measurement of its total length and width. Mouthparts not well distinguishable. The 1st and 2nd palpomeres, measuring 27 and 75 respectively the other palpomeres measuring: 3rd – 102; 4th – 57; 5th – 192. Palpal formula as 1.4.2.3.5., with the 5th palpomere bigger than the sum of 3rd and 4th. Newstead's spines not visible on the palps. One antenna incomplete showing only the first three antennomeres, the other antennal ascoids visible just on segment AXIII, simple and short not reaching the apex of the subsequent flagellomere. Apical papilla present on segment AXIII and AXVI, in this last segment median and basal papillae are also visible. Measurements of flagellomeres: AIII – 249; AIV – 142; AV – 142. Ratio AXV/AXVI longer than 1.

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Fig. 1. – *Trichopygomyia killickorum* sp. n., holotype, Dominican amber. Scale = 100 μ .

Thorax: thoracic bristles not visible except for those seen on the notum. Wings with 1,585 in length and 465 width. Principal wing indices: α (R2) – 306; β (R2 + R3) – 204; γ (R2 + R3 + R4) – 272; δ (part of R1 that extends beyond the junction of R2 + R3) – 45. Legs without special characters. Anterior, median and posterior femorae measuring 600, 657 and 623, respectively. Anterior, median and posterior tibiae measuring 838, 1,076, 1,167. Anterior, median and posterior tarsomeres measuring 521, 611 and 702 respectively.

Abdomen: genital pump and genital filaments not visible. Aedeagus conical. Style 159 long, with four spines in the following disposition: one apical, one upper external, one lower external implanted in the basal 3rd of the structure, this one being thinner than the others, and one internal on the middle of the style. Pre-apical bristle not observed. Coxite without bristles measuring 260 long by 57 in its maximum width. Length of paramere 227, showing a lobe in the dorsal median region, upward to the basal region of the structure with a group of bristles. Lateral lobe very long in relation to coxite, with 408 of length by 22 wide, ratio of lateral lobe/coxite 1,56:1.

Holotype, male, Dominican Republic, North Santiago, presented by R.P. Brazil, 2001. The holotype is in a piece of amber from the mid-Miocene period, deposited in the Phlebotomine Sandfly collection of the

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DISCUSSION

Despite we could not observe the presence of pre-apical bristles, all the other structures as such: apical sensillae in A XIII, ascoids simple, 5th palpomere bigger than 3rd and 4th. Style with four apical spines, lateral lobe longer than coxite and the presence of a dorsal lobe on paramere allowed us to include this new species in the modern genus *Trichopygomyia*.

Actually the males of the 15 species of this genus can be separated in the base of the ramification of the paramere that can be bifurcate or trifurcate (Arias *et al.*, 1983). This new species is included in the first group with paramere bifurcate. Among the species in this group we can distinguish it from *Trichopygomyia convitti* (Ramírez Pérez, Martins & Ramírez, 1976), *Trichopygomyia dasypogedon* (Castro, 1939) and *Trichopygomyia pinna* (Felicangeli, Ramírez Pérez & Ramírez, 1989) by the form of the dorsal extension of aedeagus. The form of the dorsal lobe of paramere serves to distinguish it from *Trichopygomyia trichopyga* (Flock & Abonnenc, 1945), *Trichopygomyia rondoniensis* (Martins, Falcão & Silva, 1965), *Trichopygomyia ferroae* (Young & Morales, 1987), *Trichopygomyia ratcliffei* (Arias, Ready & Freitas, 1983), *Trichopygomyia wagleyi* (Causey & Damaceno, 1945) and *Trichopygomyia longispina* (Mangabeira, 1942). The species more similar to *Trichopygomyia killickorum* sp. n. is *Trichopygomyia witoto* (Young & Morales, 1987), however, the new species can be separated from *T. witoto* by the shorter dorsal lobe of paramere and with a short dorsal arm directed to the basal region and absence of ventral setae in the apical region of coxite.

The disposition of spines in the style also separates the new species from other species. In modern *Trichopygomyia* spp. this disposition is one apical, one upper external, one lower external implanted in the middle of the structure and one internal implanted in the basal 3rd of the style. In *T. killickorum*, occurs the inversion of the lower external spine that is in the basal 3rd and the internal one implanted in the middle of style. Despite this we decide to include it in the genus *Trichopygomyia* until new specimens of this species are found.

Most species of *Trichopygomyia* are found in the Amazonian region except for *Trichopygomyia triramula* (Fairchild & Hertig, 1952), extending from South America to Central America. This may indicate that Hispaniola Island was formed by large forested areas after the formation of the Proto-Greater Antilles.

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