RESEARCH NOTE

Lutzomyia neivai (Pinto, 1926) in Bolivia (Diptera, Psychodidae, Phlebotominae)

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CB Marcondes (1996 Mem Inst Oswaldo Cruz, 91: 457-462) proposed the revalidation of Lutzomyia neivai (Pinto, 1926) which, together with L. intermedia s.s., would form the L. intermedia complex. Insects of this complex have been reported in Brazil, Argentina and Paraguay (DG Young & M Duncan 1994 Guide to the Identification and Geographical Distribution of Lutzomyia Sand Flies in Mexico, the West Indies, Central and South America (Diptera: Psychodidae), Mem Am Entom Inst 54, 881 pp.), and have been incriminated as vectors of dermal leishmaniasis in São Paulo (OP Forattini et al. 1976 Rev Saúde Pubb 10: 31-43, AC Gomes et al. 1983 Rev Saúde Pubb 14: 540-556) and Rio de Janeiro (e.g., EF Rangel et al. 1990 Mem Inst Oswaldo Cruz 85: 39-45). However, FA Siqueira (1972 Pest Art News Summ 18: 249-268) and F Le Pont et al. (1992 Leishmanioses et Phlébotomes en Bolivie, ORSTOM Ed., 116 pp.) mentioned the presence of L. intermedia in Bolivia.

Recently, CB Marcondes (1998 Rev Soc Bras Med Trop 31: 51-58) studied the geographical distribution of this complex, and identified all specimens from the State of Paraná, west of the State of São Paulo, Paraguay, Argentina and Bolivia as L. neivai.

We got 39 measurements [1997 Morfometria e DNA Mitochondrial de Populações Sul Americanas de Lutzomyia intermedia (Lutz & Neiva, 1912) (Diptera, Psychodidae, Phlebotominae), PhD Thesis, Univ. Fed. Paraná, xxiv+260 pp., p. 57, 59] from one male and 14 females of L. neivai from Bolivia. The insects were collected in Fortín Campero, near Bermejo (22°11′S 64°38′W), Tarija Department, southern Bolivia. The region has sandy soil, the vegetation is low and the dry season is very short (900-1500 mm/year). Collections were made in a gallery forest in the foot of the last hills of subandean area, called "Argentine Yungas". Based on extensive studies in the region, this was the only species found and it is very aggressive to man.

Insects identified as L. neivai (Marcondes 1997 loc. cit.) were suspected as vectors of parasites of dermal leishmaniasis in a nearby region of Argentina (OD Salomón et al. 1992 Rev Inst Med Trop S Paulo 37: 91-92) and its importance in Bolivia as a vector needs to be studied.

The fork between R2 and R3 of both wings of one female was much near the tip to the wing than usual in other insects of the complex (cf. ca. 750 specimens measured). The distances in her wings, compared to the wings of other females from the same locality, are shown in the Table.

HH Taniguchi et al. (1992 Rev Inst Adolfo Lutz 52: 105-106) described a female of L. intermedia (actually L. neivai) from São Roque, in the State of São Paulo, with three spermathecae, and many other authors described several different anomalies in other species (e.g., MP Barreto 1943 Rev Med Cir Bras 51: 703-710, Floch & Abonnenc 1944 Insect Pasteur Guayane fr 95: 4, A Dampf 1945 Bol Entornol Venez 1: 153-159, JF Azevedo 1946 Mem Inst Oswaldo Cruz 85: 39-45).

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TABLE

Measurements, in μm, of several wing distances of a female of *Lutzomyia neivai* from Bermejo, in southern Bolivia, compared to other females from the same locality.

| Structures                        | Left wing | Right wing | Wings of other females
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Length of wing</td>
<td>2007</td>
<td>2103</td>
<td>2078 ± 91.86(12)</td>
</tr>
<tr>
<td>Max. width wing</td>
<td>597.7</td>
<td>608.8</td>
<td>612.8 ± 48.1 (11)</td>
</tr>
<tr>
<td>Length of R₄</td>
<td>1387</td>
<td>1410</td>
<td>1394 ± 59.99(12)</td>
</tr>
<tr>
<td>Length of R₂ (α)</td>
<td>190.1</td>
<td>127.4</td>
<td>569.6 ± 55.37(11)</td>
</tr>
<tr>
<td>Length of R₂+₃ (β)</td>
<td>699.6</td>
<td>749.8</td>
<td>338.6 ± 55.37(12)</td>
</tr>
<tr>
<td>α / β</td>
<td>0.272</td>
<td>0.17</td>
<td>1.81 ± 0.51 (11)</td>
</tr>
<tr>
<td>Length of R₂+₃+₄ (γ)</td>
<td>244.1</td>
<td>236.4</td>
<td>231.8 ± 93.12(12)</td>
</tr>
<tr>
<td>Dist. fork R₂+₃ - R₁ (δ)</td>
<td>-165</td>
<td>-183.4</td>
<td>290.4 ± 45.93(11)</td>
</tr>
<tr>
<td>Dist. forks R₂+₂ - M₁+₂ (κ)</td>
<td>195.9</td>
<td>270.2</td>
<td>187.8 ± 54.78(12)</td>
</tr>
<tr>
<td>Length of R₃ (ε)</td>
<td>321.3</td>
<td>280.8</td>
<td>719.9 ± 54.93(11)</td>
</tr>
</tbody>
</table>

α: mean ± standard deviation (number of measured specimens).
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