Summary: We report for the first time the presence of Phlebotomus mascittii and the female of Phlebotomus chadlii in Algeria. These two species were collected during an entomological study conducted in endemic visceral leishmaniasis focus from the north part of the country, Kabylia.

KEY WORDS: Phlebotomus mascitti, Phlebotomus chadlii, Algeria.

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wenty-two phlebotomine sand fly species (Diptera: Psychodidae) have been reported in Algeria, 12 belonging to the Phlebotomus genus and 10 to the Sergentomyia genus (Belazzoug, 1991). Those included in the Phlebotomus genus are of medical importance since they comprise recognized or suspected vectors of leishmaniasis and/or Phlebovirus. We report here for the first time (i) the presence of Phlebotomus mascittii in Algeria, and (ii) the presence of the female Phlebotomus chadlii in the same area.

The entomological investigation was conducted in Larbaa Nath Iraten (4° 12' 05" E, 36° 38' 10" N at 916 m altitude), in a humid bioclimatic zone, in Kabyliaian area (Izri et al., 2008). Sand flies collection was performed during summer 2009 using CDC miniature light traps.

A total of 883 sand flies (703 males and 180 females) were captured and morphologically identified during 16 night-CDC traps (55 sand flies/night-CDC traps). Ten distinct species were identified: one species belonging to the Sergentomyia genus (S. minuta) and nine species to the Phlebotomus genus including one female of P. mascittii and two females of P. chadlii (Table I).

P. mascittii was described in Italy (Roma), then in other countries in the north shore of the Mediterranean basin, from Spain to Turkey (Seccombe et al., 1993). In countries of northern Europe, it was reported in Germany and Switzerland (Naucke et al., 2000). However, P. mascittii has always been found in low density. In France, P. mascittii species was observed in several departments including in the north, such as Alsace (Callot, 1950). In southern regions, it was usually associated with the main recognized vectors of visceral leishmaniasis, P. ariasi and P. perniciosus (Rioux et al., 1984; Pesson et al., 1985). It was described as an anthropophylic and aggressive species (Pesson et al., 1985).

<table>
<thead>
<tr>
<th>Specie</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. (Larroussius) perniciosus</td>
<td>564</td>
<td>115</td>
<td>679</td>
</tr>
<tr>
<td>P. (Larroussius) longicuspis</td>
<td>84</td>
<td>39</td>
<td>123</td>
</tr>
<tr>
<td>P. (Larroussius) langeroni</td>
<td>24</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>P. (Larroussius) perfiliei</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>P. (Larroussius) ariasi</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>P. (Larroussius) chadlii</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>P. (Paraphlebotomus) sergenti</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>P. (Phlebotomus) papatasi</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>P. (Transphlebotomus) mascittii</td>
<td>22</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>S. (Sergentomyia) minuta</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 703 | 180 | 883

Table I – Sand fly species diversity in LNI, Kabyliaian area during summer 2009.

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Fig. 1. – Spermathecae of *Phlebotomus (Transphlebotomus) mascitti* (photonic microscope × 200).

Fig. 2. – Spermathecae of *Phlebotomus (Larroussius) chadlii* (photonic microscope × 200).
not been confirmed so far. Hence, we noticed for the first time the presence of \textit{P. mascittii} female (Fig. 1) in the southern part of Mediterranean. This female was collected from animal shelter localized in house basement.

\textit{P. chadlii} was described from Northwest Tunisia (El Kef) among male sand fly specimens. However, the female remained unrecognized until 2006 when it was described in specimens trapped in El Kef, Tunisia (Chamkhi \textit{et al.}, 2006). In Algeria, \textit{P. chadlii} is widely spread in humid, sub humid and arid bioclimatic zones (Dedet \textit{et al.}, 1984). For unknown reasons, in Algeria, only male specimens have been reported so far (Rioux \textit{et al.}, 1970; Dedet \textit{et al.}, 1984). In our survey, three specimens of \textit{P. chadlii} were identified, two females (Fig. 2) and one male, all of them cached in animal shelters. The bioclimatic distribution of \textit{P. chadlii} coincides with that of \textit{P. ariasi} (Dedet \textit{et al.}, 1985), the proven vectors of \textit{L. infantum} and of Sand fly Fever Phleboviruses (SFV) in the Mediterranean basin (Izri \textit{et al.}, 2008). Using the mitochondrial \textit{cyt b} gene, Franco \textit{et al.} (2010) reported that \textit{P. chadlii} might be a sister group of the European and the Moroccan \textit{P. ariasi} species. However, to date there is no confirmation neither for their vector role, nor for their trophic preferences. The two females collected in this study were not engorged, thus precluding blood meal analysis. We strongly support the idea of further studies (i) to elucidate the relationship between \textit{P. chadlii} and \textit{P. ariasi}, (ii) to identify their trophic preferences, and (iii) to study the relationship host/leishmaniasis parasite.

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