ABNORMAL SPERMATHECAE NUMBERS IN PERUVIAN SANDFLIES (DIPTERA: PSYSCHODIDAE).

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ABSTRACT - We report and illustrate two abnormal spermatheca numbers found in Peruvian sandflies, a supernumerary spermatheca in Lutzomyia carrerai and the absence of one spermatheca in L. amazonensis.

Key words: Lutzomyia, abnormal spermatheca, Peru.

INTRODUCTION

Anomalies in the number of different sandfly (Diptera: Psychodidae) structures are most frequently found in males; supernumerary style spines are most common. In females, a frequent abnormality found is in the number of cibarial teeth (FELICIANGELI et al., 1985). Anomalies in the shape or in the number of spermathecae are reported to be associated with gynandro-morphism, such is the case of the obstruction of one individual duct reported by SHERLOCK (1958) and the undevelopment of one spermatheca reported by RIOUX et al. (1974) and HARRAT et al. (1993).

Female Lutzomyia sandflies normally have two spermathecae. In this paper we report two cases of abnormal numbers of spermathecae detected in Peruvian Lutzomyia sandflies from the tropical forest Eastern to the Andean Cordillera.

MATERIALS AND METHODS

The sandfly material The Lutzomyia individuals used for this study were identified and separated from the sandfly collection deposited in the Entomology Laboratory of the Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, Lima, Perú. The specimens separated were: one specimen of Lutzomyia carrerai (BARRETTO, 1946) with a supernumerary spermatheca and one specimen of L. amazonensis (ROOT, 1934) with the absence of one spermatheca.

The specimens were clarified with NaOH 10%, treated with lactophenol (3:4, v/v) and mounted in slides with Canada Balsam.

RESULTS AND DISCUSSION

Two specimens of Lutzomyia spp. from Perú were found with abnor-
mal spermatheca numbers. A brief description of them follows:

1.- A female specimen of *Lutzomyia carrerae* was found with one supernumerary spermatheca (Fig. 1a). The shape of the abnormal third spermatheca differs from the other pair. Measurements of all three spermathecae differ from those of normal individuals caught from the same place (Table 1). The imbricated rings of the third abnormal spermatheca are irregularly inflated, the individual duct is connected directly to the middle of the common duct of the other pair. The spermatheca body and the individual duct are smaller in the third abnormal spermatheca than the other pair. From the normal 4 horizontal cibarial teeth, only vestiges of a central one are present (Fig. 1b).

This specimen was found in a collection of 482 females of *L. carrerae* from Coloradito (Pillcopata, Cuzco), at 1000 m above sea level, it was caught using CDC light traps in primary rain forest, on August 9, 1989.

2.- A female specimen of *Lutzomyia amazonensis* was found with the absence of one spermatheca (Fig. 2). The spermatheca present is indistinguishable from that of normal individuals. The individual duct appears to be longer, but its basal portion represents the common duct of the normal specimens.

This specimen was found in a collection of 69 females of *L. amazonensis* from Veinticinco de Diciembre (Yurimaguas, Loreto), at 220 m above sea level, and was caught using a Shannon trap with protected human bait, placed in secondary forest, on July 3, 1991.

The mechanisms causing abnormal spermatheca numbers in sandflies, or the physiological consequences and implications for their role as *Leishmania* vectors were not described. Both species mentioned here are highly anthropophilic, and *L. carrerae* was found naturally infected with *Leishmania braziliensis* (DESJEUX, 1992), and *L. amazonensis* was recorded infected with flagellates (LAINSON et al., 1973).

**ACKNOWLEDGEMENTS**

We thank M. Cabanillas for providing the material of *L. amazonensis* and K. Jones, Department of Medical Illustration, Liverpool School of Tropical Medicine, UK, for his photographic work. This study was partially funded by UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases, Switzerland.
Figura 1a. Last abdominal portion of the female specimen of *Lutzomyia carrerai* from Coloradito (Pillcopata, Cuzco) showing a supernumerary spermatheca (arrow). **Figura 1b.** The cibarium of the same specimen with only vestiges of horizontal teeth (arrow).

Figura 2. Last abdominal portion of the *Lu. amazonensis* female specimen from Veinticinco de Diciembre (Yurimaguas, Loreto) showing one spermatheca lacking. The bars are equivalent to 10 μm.
Literature Cited


Aceito para publicação em 7/12/94