RESEARCH NOTE

Notes on the Bat Flea *Hormopsylla fosteri* (Siphonaptera: Ischnopsyllidae) Infesting *Molossops abrasus* (Chiroptera)

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Among the 15 currently recognized families of the order Siphonaptera (RE Lewis 1998 *J Med Entomol 35*: 377-389), Ischnopsyllidae is specific to a single order of hosts, Chiroptera, representing about 5% of the known records (AG Marshall 1981 *The Ecology of Ectoparasitc Insects*, Academic Press, London, 459 pp.). Only five genera and five species of Ischnopsyllidae occur in Brazil (PM Linardi & LR Guimarães, *Sifonápteros do Brasil*, Museu de Zoologia USP, in press).

One of these genera, *Hormopsylla*, is constituted by four species, as recently recognized in the review of MW Hastriter and R Guerrero (1998 *Proc Entomol Soc Wash 100:* 247-251), infesting bats of the family Molossidae, as well as vespertilionid and phyllostomid bats. Three species are restricted to the Neotropical region; the other reaches the southern Neartic region.

Only *H. fosteri* (Rothschild, 1903) has been recorded in Brazil, in the states of São Paulo, Minas Gerais, Paraíba and Rio Grande do Norte. The Brazilian hosts includes *Molossus bonariensis*, *Desmodus rotundus rotundus* and *Phyllostomus hastatus* (Linardi & Guimarães *loc. cit.*).

According to Hastriter and Guerrero (*loc. cit.*), specimens of *Hormopsylla* are rare in collections. In contrast to the fleas which infest other groups of hosts, bat fleas are not common on bats (Marshall *loc. cit.*). Mammals fleas are commonly found on their hosts' bodies often in considerable numbers, even on small hosts some populations may also be quite large, as noted on insectivores: 932 *Archaeopsylla erinacei* from a single hedgehog (FGAM Smit 1958 *Brit Mus Nat His Econ Ser 3A*: 1-20); lagomorphs: 769 *Spilopsyllus cuniculi* from a rabbit (RCH Shepherd & JW Edmonds 1976 *Aust Wildl Res 3*: 29-44); rodents: 219 *Xenopsylla cheopis* from a rat *Rattus rattus* (HB Morlan 1952 *Am Midl Nat 48*: 74-93), or 80 *Malareaus telchinus* from a mouse *Microtus californius* (HE Stark & VI Miles 1962 *Am J Trop Med Hyg 11*: 525-534). For Chiroptera, the greatest number of fleas found on a single bat has been 34, for the species *Nycteridopsylla pentacteno* and *Plecotus austriacus* (L Hurka 1965 *Vest Czl Spol Zool 29*: 239-243).

Another question regarding the infestation on bats would be the probable competitive exclusion among ectoparasites, as claimed by RL Wenzel and VJ Tipton (1966 Some relationships between mammal hosts and their ectoparasites, p. 677-723. In RL Wenzel & VJ Tipton, (eds), *Ectoparasites of Panama*, Field Mus Nat Hist, Chicago) and SC Barker (1994 *Int J Parasitol 24*: 1285-1291). For this reason, Chiroptera infested with fleas seldom have any mites; likewise, New World mollossid bats with polyctenids have no nycteribiids or streblids, and nycteribiids and streblids rarely occur on the same host.

From a single female, adult and non pregnant of *M. abrasus* captured in the municipality of Belo Horizonte, State of Minas Gerais, in 17 Sept. 1998, 123 fleas (90 females and 33 males) of *H. fosteri* were recovered (Fig.1). This number represents the peak load of infestation by bat fleas up till now recorded for species of Chiroptera. When related to the sites of infestation on the host's body (Fig. 2), the fleas presented the following distribution: ears (36%); head (24%); thorax (17%); other sites (23%). Considering the size and weight of the host, the load of infestation might be an important parameter for studies evaluating the direct impact of ectoparasites on bats. Since the greater number of fleas was observed on the regions of head and ears, the host might be conducting some grooming activity. *M. abrasus* also constitutes a new host record for *H. fosteri*.

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Fig. 1: female of *Hormopsylla fosteri.*

Fig. 2: anterior region of *Molossops abrasus* exhibiting infestation by bat fleas.