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Dietary habits of the Hairy Big-eared Bat (Phyllostomidae, *Micronycteris hirsuta*) based on insect remains at a roost site

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Abstract

Hairy Big-eared Bats, *Micronycteris hirsuta*, have been observed to occupy attics in buildings that are not well sealed. Stereotypically, prey is brought to the roosting site for consumption where wings and hard structures are discarded while soft body parts are ingested. This behavior has allowed our evaluation of their diet. At the Bosque Protector La Hesperia, of the western Andes in Ecuador, this species consumed primarily katydids (Orthoptera, Tettigoniidae) and soft beetles (Coleoptera, Scarabaeidae, Melolonthinae).

Keywords. Big-eared Bats, *Micronycteris*, diet, insects, beetles, katydids

Abstract

El murciélago orejudo peludo, *Micronycteris hirsuta*, ha sido observado en el ático de un edificio con aperturas alrededor del techo. Su comportamiento estereotípico incluye el regreso al sitio de descanso con las presas antes de consumirlas. Al llegar, las alas y otras partes duras son descartadas. Como estas partes se acumulan debajo de ellos, es posible determinar la composición de lo que consumen. En el Bosque Protector La Hesperia, en el oeste de los Andes del Ecuador, *M. hirsuta* consume principalmente grillos de la familia Tettigoniidae (Orthoptera) y escarabajos suaves (Coleoptera, Scarabaeidae, Melolonthinae).

Palabras Clave. Murciélago orejudo peludo, *Micronycteris*, dieta, insectos, grillos, escarabajos

As a genus, the Little Big-eared Bats (*Micronycteris* spp.) have a broad range extending across much of the New World Tropics. They represent only a tiny portion of a huge chiropteran fauna in tropical America. Few species are well studied but some generalizations have been published for the genus. Their diet was described as including "large insects and occasional fruit"; "they forage by gleaning... cockroaches, dragonflies, and katydids from the vegetation or ground" [1]. The list of insects consumed was later augmented to include cicadas, moths, and caterpillars [2]. Habitat preferences have been described as "deep rainforest" where "they tend to fly along streams, gullies and paths well shaded by the forest canopy." Emmons [1] goes on to categorize their roosts as occurring in "damp hollows near the ground", including "hollow logs or trees, cavities under roots, fallen logs, overhanging dirt banks, and culverts".

As a species, *Micronycteris hirsuta*, also known as the Crested Big-eared Bat due to the elongate pelage of its crown, reportedly occurs in both eastern and western lowlands of Ecuador from 50 to 1800 m [2]. In relation to overall habitat occupation, we observed this species at a typical cloud forest elevation (1380 m) on the western Andean slope well within reported altitudinal limits. In other aspects however, our observations exhibit several discrepancies with published information. Although Tirira [2] includes abandoned buildings as possible roost sites, use of structures with human presence has not been previously documented. Here we report a colony of 3 to 4 individuals roosting in a

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Figure 1: Little Big-eared Bat (*Micronycteris hirsuta*)

second-floor rarely-opened closet inside an irregularly inhabited house within the Bosque Protector La Hesperia (00°21'07.7"S, 78°51'08.6"W). This small colony has been present for at least 7 years, during which time the remains of thousands of prey items have, on occasion, accumulated on the floor below them. The farmhouse in which the colony was observed is situated in a large open area surrounded by pastures and scattered infrastructure associated with a small-scale dairy operation. Although expansive intact forests are accessible, these individuals would have to fly between 200 and 300m in treeless areas to reach them. The nearest stream is estimated to be approximately 500 m from the roost site.

To determine diet, we counted three random samples of 100 discarded wings accumulated on the floor below the bats at this site. On average, *M. hirsuta* consumed 69.7% orthopterans (59.3% katydids, Tettigoniidae and 10.3% grasshoppers, Acrididae) and 30.3% scarabs with rather soft elytra (Coleoptera, Scarabaeidae, Melolonthinae), all of which could be gleaned from weedy pastures. Discarded grasshopper hemi-elytra (acridids similar to *Schistocerca* spp.) coincide with common inhabitants of such pastures, implying that these bats may be feeding in open areas rather than dense forest. Katydids and scarabs similar to those represented in discard piles appeared in cursory nocturnal visual surveys of these habitats as well. No cockroach or dragonfly wings were discovered among the accumulations below this colony and there was no indication of fruit consumption (i.e. no presence of seeds, fragments of peels or stems whatsoever).

References

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[2] Tirira, D. 2007. "Mamíferos del Ecuador: Guía de campo." Ediciones Murciélago Blanco: Quito, Ecuador.