Choeroniscus minor (Lesser Long-tongued Bat)

Family: Phyllostomidae (Leaf-nosed Bats)
Order: Chiroptera (Bats)
Class: Mammalia (Mammals)

Fig. 1. Lesser long-tongued bat, *Choeroniscus minor*.

[http://inpn.mnhn.fr/espece/cd_nom/459544, downloaded 1 March 2015]

TRAITS. *Choeroniscus minor* is a bat of small to medium size. Studies from French Guiana showed that females on average weighed about 9.8g and males weighed 8.0g (Simmons and Voss, 1998). Generally females are larger than males. The forearms are 33-38mm in length. In comparison to other phyllostomids, *C. minor* wings are short, which is a common trait in glossophagine (tongue-feeding) bats. This species has an elongated muzzle with a triangular nose-leaf 4mm in height. The ears are rounded and slightly pointed with a cut tip, curved inner margins and a short tragus, a prominence on the inner side of the external ear (Fig. 1). The tail is fixed in the uropatagium, the membrane that extends between the thighs, for the first half on the tail membrane with the tip being seen on the upper surface. Pelage (fur) is dense and dark brown (Solmsen and Schliemann, 2008). This species is considered to have bicoloured fur, each hair has a pale base and a dark tip (Nogueira et al., 2012).

DISTRIBUTION. As seen in Fig. 2, *Choeroniscus minor* is found in southern parts of Venezuela, northern Brazil, Ecuador, southeastern Colombia, Suriname, Bolivia, the Guianas and Peru (Sampaio et al., 2008). This species is also found on the island of Trinidad (Simmon and Voss, 1998).

HABITAT AND ACTIVITY. Inhabits mainly tropical rain forests and old-growth forests near river or lake areas (Fig. 3). It is also commonly associated with Amazon lowlands (Solmsen and Schliemann, 2008). Like most bats, *C. minor* is nocturnal. It rests during the day and goes out to feed at night (Hutson et al., 2001).

FOOD AND FEEDING. This species feeds on pollen, nectar and sometimes insects. As a flower-feeding bat it has large eyes and a good sense of smell to direct it to flowers for feeding. The relationship between *C. minor* and flowers, like other flower-feeding bats, are mutualistic and so this species acts as a pollinator as it moves from flower to flower for feeding (Hutson et al., 2001). They have a long tongue, which can stretch to half of the body length to retrieve pollen and nectar contained in flowers. At the end of the tongue there are papillae resembling bristles positioned in a backward direction to take up the nectar (Solmsen and Schliemann, 2008). Insects eaten are found in and around the flowers they feed on as well as in the air, which the species catches during flight. The wings play an important part in feeding where they are used to catch insects. This part of the wing is held by a small cartilage spur called the calcar (Fig. 4). It forms a pouch which traps insects to be eaten in the wing or later on back at the roost (Smithsonian Encyclopedia, 1980). The presence of molar cusp aids in chewing the insects. The nectar is a poor source of protein and so *C. minor* obtains most of its protein from pollen (Koopman, 1981). This species has a high wing load (Solmsen and Schliemann, 2008), which allows it to "hover" over the flowers to feed (Fig. 5).

POPULATION ECOLOGY. *Choeroniscus minor* occupies tropical rain forests with a preference for primary forests near a body of water; river or lake. Eleven specimens were collected in French Guiana, in a location mostly covered with primary forest (Simmons and Voss, 1998). In Venezuela, eight specimens were found suspended under a log fallen across a river (Sanborn 1954). A number of specimens have been observed in the Peru Amazon basin, roosting under logs or hollowed trees in small groups or pairs in riverine areas. Three specimens were seen among the roots of fallen trees and a pair was observed beneath the bark of a log. Roosting heights were between 50-70 cm above the ground and the roosts were occupied for a few months. In French Guiana, a group of six individuals consisting of an adult male, four adult females, and one of unknown sex were found roosting under a fallen tree. A single adult male was seen perched below an undercut bank (Simmons and Voss, 1998). *C. minor* may roost by itself or as much as eight per group (Goodwin and Greenhall, 1961). This species is uncommon but widespread (Sampaio et al., 2008).

REPRODUCTION. All bats are viviparous and *C. minor* females have one pup at a time but may breed twice within one season. A lactating female was observed in Columbia by a study carried out by Tamsitt and other biologists in December 1965 and a juvenile was observed in Peru in a study conducted by Tuttle in August 1970 (Solmsen and Schliemann, 2008). In accordance with Solmsen and Schliemann (2008), it can be noted that *C. minor* would possibly breed during the wet season: June-December. During this season is where flowers, the main source of food, would be most abundant and could account for why breeding occurs during this time.

BEHAVIOUR. Juvenile behaviour: In studies conducted, no juvenile observations were noted. Nevertheless, general observations of the Microchiroptera sub-order, to which *C. minor* belongs, are documented. New-born microbats are typically about one quarter of its mother's weight (Richardson, 2015). They are completely dependent on their mothers (altricial), however new-born microbats tend to be more altricial than megabats. Bats are unable to fly when they are born, so the young remain in the roost while their mothers search for food or they cling to the mother during flight. Young microbats are usually able to fly within three weeks (Richardson, 2015).

Communication: As a member of the Microchiroptera sub-order, *Choeroniscus minor* uses echolation. This an ultrasound generated through the larnyx and emitted via mouth or nose (rare). The sounds are in a range greater than that of humans and is used to navigate through surroundings as

well as communicate with other bats. The presence of the tragus is thought to play a role in sound definition, however its true function is unknown (Richardson, 2015).

APPLIED ECOLOGY. Conservation threat: The major threat noted is deforestation although it rarely occurs to have a significant effect on the *C. minor* population. Conservation action- there are many protected areas in the range in which the species occurs and there is a forest retention requirement (Sampaio et al., 2008).

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Fig. 2. Distribution of *Choeroniscus minor.*

[http://www.iucnredlist.org/details/4774/0, downloaded 2 March 2015]

Fig. 3. *Choeroniscus minor* perched on a tree in Gorgona National Natural Park.

[https://www.flickr.com/photos/62750138@N05/5714298126/ , downloaded 25 March 2015]

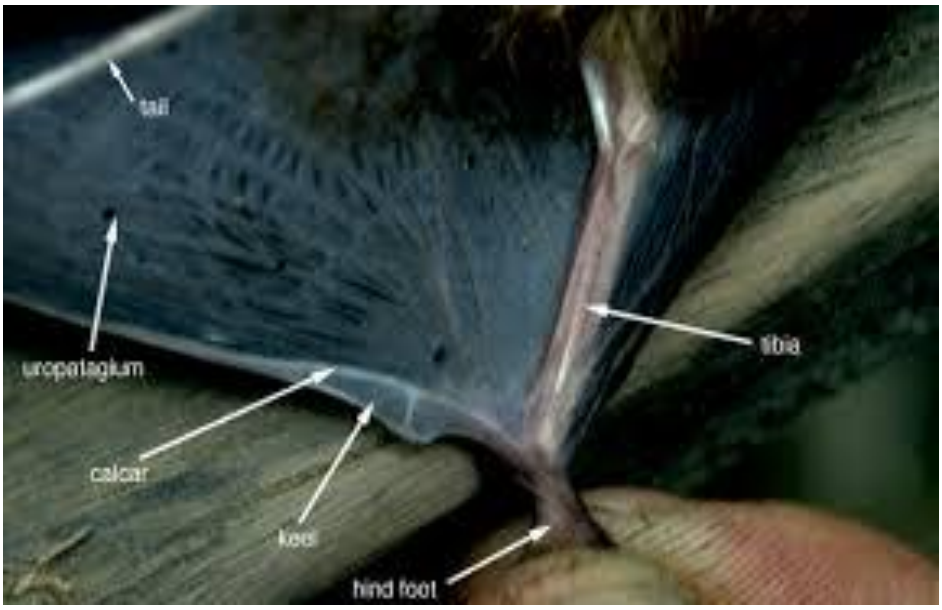

Fig. 4. Bat calcar.

[http://en.wikipedia.org/wiki/Calcar , downloaded 26 March 2015]

Fig. 5. *Choeroniscus minor* hovering over a flower to feed.

[http://www.planet-mammiferes.org/drupal/en/node/38?indice=Choeroniscus+minor, downloaded 1 March 2015]

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