Rhynchonycteris naso (Proboscis Bat)

Family: Emballonuridae (Sheath-tailed and Sac-winged Bats)
Order: Chiroptera (Bats)
Class: Mammalia (Mammals)

Fig. 1. Proboscis bat, *Rhynchonycteris naso*.

[http://animaldiversity.org/collections/contributors/Grzimek_mammals/Emballonuridae/Rhynchonycteris_naso/medium.jpg, downloaded 21 January 2016]

TRAITS. A small species of bat, characterised by an elongated peaked nose with a pair of pale white stripes on its lower back and rear (Fig. 1). Total length males 56mm, females 59mm. Forearm length 35-41mm, ear length 13.2-13.6mm. This is a monotypic bat species, that is, the only species in the genus *Rhynchonycteris*. Ears including tragus are dark brown, long, conspicuous and curved distally (at tip). Possesses no wing sac. Small simple upper incisor, relatively triangular and large first upper premolar. Fur short thick and soft. Colour is grizzled brown to grey on the back and light brownish grey on the abdomen (Jones and Plumpton, 1992).

DISTRIBUTION. Found exclusively in lowland neotropics (Nogueira and Pol, 1998) below elevations of 300m. Widespread in Trinidad, south east Mexico, northern parts of South America, south east Brazil, eastward of the Andes to Peru and northern Bolivia (Fig. 2). There is no documented fossil record of this bat species.

HABITAT AND ACTIVITY. Frequently found in riparian forest, *R. naso* lives in relatively stable nonseasonal environments. Food seeking occurs in the open at twilight and nightfall. It feeds above water mainly on small insects that are abundant within the feeding area. Flight is restricted to 1.5m above water. Found roosting adjacent to or over gradually moving watercourses. When watercourses become dry during the dry season they leave the roosting site and move on (Nogueira and Pol, 1998). Colonies comprising between 3-45 bats are usually found roosting on tree trunks (Fig. 3), under bridges, and at cave entrances over water or beneath curled dried leaves of banana (*Musa*) or balisier (*Heliconia*). When disturbed both males and females fly off together in a linear pattern as a group and settle on a similar tree to the one abandoned. Visualization of bats against tree bark is difficult due to protective coloration.

FOOD AND FEEDING. *R. naso* are exclusively aerial insectivores. Diet includes small abundant insects such as chironomids, small beetles, caddis flies and mosquitoes found within their feeding area. *R. naso* forages at twilight and night, mainly over moderately flowing rivers. The primary male forages on the periphery of the feeding area to drive away competitors for food from other colonies, whereas mature females and young feed at the core of the feeding area. Colonies of six individuals usually forage a 4-5m diameter area (Jones and Plumpton, 1992).

POPULATION ECOLOGY. *R. naso* is an abundant bat that roosts in colonies of 5-11 individuals during the day and part of the night. There is a distinct space of 1-15cm between roosting individuals (Nogueira and Pol, 1998). Individuals in large colonies roost in an oval pattern, whereas linear roosting in smaller colonies. However, the occasional solitary individual can be found. *R. naso* roosts exclusively with individuals of its own species. Each colony has 3-6 roosting areas and consists of equal numbers of males and females. Each colony has an adult dominant male which breeds within the roosting colony without challenge from other males (Jones and Plumpton, 1992). Predators include hawks (*Buteo*), falcons (*Falco*), egrets (*Leucophoyx*) and the orb spider *Argiope savignyi* (Fig. 4) (Lewis et al., 2007). No recorded lifespan for this species.

REPRODUCTION. Females 18 months and older produce a single pup at each pregnancy and up to 2 young per year. This species breeds year round, therefore, pregnancies are not simultaneous within the population. Births usually occur during the rainy season, October to March. Lactation of offspring from the first pregnancy usually occur during gestation of the second offspring. Offspring are large at birth and attain adult size in 14 days.

BEHAVIOUR. Juvenile behaviour: Young bats leave their mother within 1 week of birth, but stay in close proximity. At 2-4 months old, following weaning, male and female juveniles leave parental care and join neighbouring colonies (Jones and Plumpton, 1992)

Antipredator behaviour: When disturbed the bats would fly off quickly together as a group in a linear pattern and settle on a similar tree to the one abandoned. Visualisation of *R. naso* roosting against tree bark is difficult when motionless due to protective coloration (Fig. 5) and pelage pattern (Hans, 2014).

R. naso communicate via sonar pulses with frequency range 80-105 KHz. The bat emits multiharmonic echolocation calls to determine its surroundings especially at night (Fenton et al., 1999).

APPLIED ECOLOGY. Listed on the IUCN Red List of threatened species as least concern because it is common and as a result of its large population. *R. naso* is protected in Mexico under the 'NOM-059-SEMARNAT-2001.' (IUCN, 2008). No major threats experienced. No record found of the bat being utilized by harvesting, hunting or as pets. No documented problems of pest control or human disease. *R. naso* is rabies negative.

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Fig. 2. *Rhynchonycteris naso* geographic distribution.

[https://en.wikipedia.org/wiki/Proboscis bat, downloaded 12 February 2016]

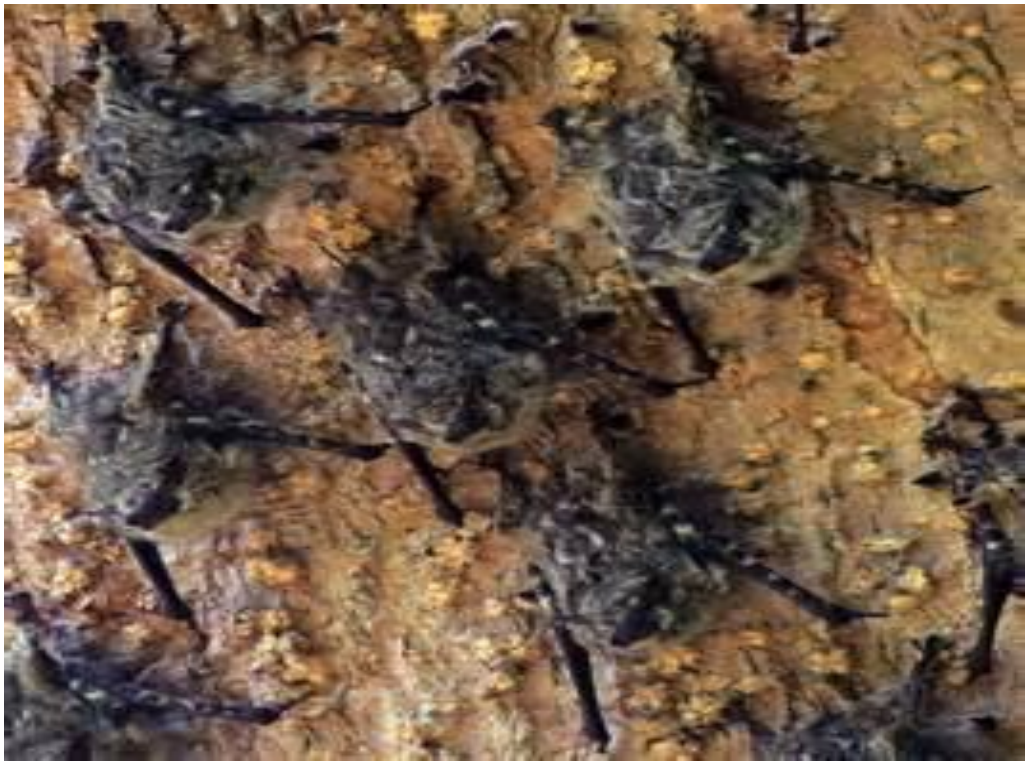

Fig. 3. *Rhynchonycteris naso* roosting as a colony.

[https://tse4.mm.bing.net/th?id=OIP.Md292a5e30e026edad6bd462a8f3a16cco0&pid=15.1, downloaded 28 February 2016]

Fig. 4. Predation of *R. naso* by the orb weaving spider, *Argiope savignyi*.

[https://www.youtube.com/watch?v=ig2BvMhOVRM&feature=player_detailpage#t=3, downloaded 28 February 2016]

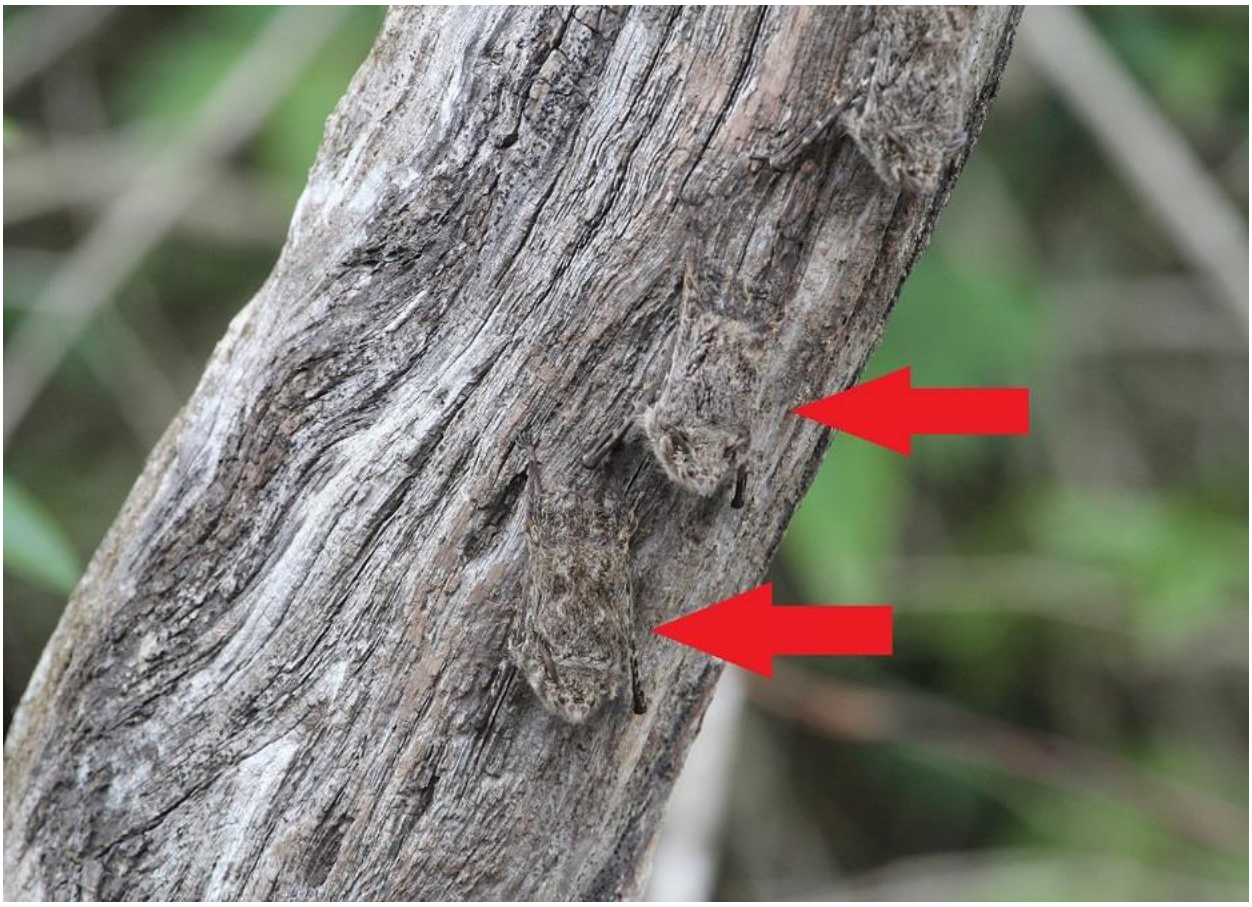

Fig. 5. *Rhynchonycteris naso* exhibit protective coloration against tree trunk.

[https://brasilienexkursion.files.wordpress.com/2015/02/fledermaus-2klein.jpg?w=600&h=400, downloaded 12 February 2016]