**Pteronotus personatus** (Wagner’s Mustached Bat)

Family: Mormoopidae (Ghost-faced Bats)
Order: Chiroptera (Bats)
Class: Mammalia (Mammals)

![Wagner’s mustached bat](http://www.planet-mammiferes.org/drupal/en/node/38?indice=Pteronotus+personatus, downloaded 6 March 2016)

**Fig. 1.** Wagner’s mustached bat, *Pteronotus personatus*.

**TRAITS.** One of six species that belong to the genus *Pteronotus* (De la Torre and Medellín, 2010). Relatively small compared to other bats, with a length of approximately 6-6.7 cm and tail 1.5-1.8 cm (Wikipedia, 2015). Two distinct colour phases exist: blackish-brown over the head and back with grey ventral fur; and reddish-yellow dorsal region along with cinnamon ventral fur (Fig. 1). Most features are independent of sex and age. Long pointed ears pointing forward with ridges along the edge, with a spatulate tragus covered by short hair. The nose is enclosed by upper lip bristles as well a number of folds and minute projections from its edge. Bristles prominently emerge as an outgrowth from the upper lip where the nose is connected into the upper lip folds, giving the name mustached bat. The incisor teeth are complex with respect to shape having more
than two lobes even though the incisor teeth themselves are reduced in size (Wikipedia, 2015). Wings long and narrow so it reaches the ankles and lacks a wing-sac, while the tail emerges from the mid dorsal surface (De la Torre and Medellín, 2010).

**DISTRIBUTION.** Found throughout Central and South America, and along the Gulf of Mexico. They specifically inhabit Suriname and Colombia through eastern Ecuador, Bolivia, Peru, Brazil, Venezuela as well as Trinidad (Wikipedia, 2015).

**HABITAT AND ACTIVITY.** Strictly nocturnal (Fig. 2). This is beneficial since there are less predators and competitors at night (Encyclopedia Smithsonian, 2016). In the day they are found mainly in humid caves where temperatures are high, approximately 30-36 °C (De la Torre and Medellín, 2010). They are found near vegetation and watercourses where mines and caves are used as roosting sites. Forest environments are essential, both tropical and dry deciduous forest with heights up to 1,000m (Wikipedia, 2015). *P. personatus* fly at a speed range from 11-19.6 km/h. Sex has no effect on the speed. The average forearm length, 43.1 mm, coupled with the characteristic narrow and long wing facilitate rapid flight; bats with small wings fly at a much slower speed.

**FOOD AND FEEDING.** They are insectivores which hunt along rivers consuming insects and commonly travels along canyons (Wikipedia, 2015). Flying insects are one of the main food sources, mosquitoes, beetles and moths. An average of one insect is caught every 7 seconds generating an estimated total of 500 insects in an hour. On average, 24-40% of the body weight is consumed on a given night. Insects are caught using the tail and wing membrane as well as the mouth (Insectivorous Bats, 2003).

**POPULATION ECOLOGY.** Low flying insectivores associated with tropical wet forests and mountains where feeding occurs below 400 m. Roosts with other species of bats in spacious caves (IUCN, 2016). Colonies may exceed 15,000 individuals when congregated as seen in their primary roosting site that is caves in Mexico. Colonies of 16,000 have also been recorded in Sinaloa and Panuco. Temperature depressions that may be caused by fluctuating roosting temperatures greatly affect the Wagner’s mustache bat allowing for advanced thermoregulation capabilities during cool periods (De la Torre and Medellín, 2010).

**REPRODUCTION.** Female Wagner’s mustached bats exhibit a seasonal reproductive pattern, whereby they enter estrus once per annum. When mating is successful juveniles are born at the beginning of rainy season, June or July (De la Torre and Medellín, 2010). Pregnant females gather into a group called a nursery. An increase in number of births is seen during rainy season since insects are abundant at this time (Bateman and Vaughan, 1974). The length of the testes also vary with respect to the time of year, ranging from 2-7 mm (Jones, 1966).

**BEHAVIOUR.** Young are suckled until they are able to fly and hunt for themselves. Maternal interaction decreases over time. These bats are short-range echolocators found during the day roosting in humid caves (De la Torre and Medellín, 2010) with enormous colonies consisting approximately 100 to 10,000 individuals (Fig. 3) (Wikipedia, 2015). The roosts are shared with a myriad of other bats where Wagner’s mustached bats are in most cases the minority. Rapid high-frequency sound pulses are used for echolocation in conjunction with low-frequency modulated
sweeps. This is unique since the bats utilize Doppler-shift compensatory behaviour. When flying the frequency of returning echoes are altered causing changes in the ultrasonic pulses, compensating for this effect thus facilitating easy high speed navigation through obstacles (Fig. 4). Doppler-shift compensation allows for the maintenance of the echo frequency. Prey pursuit results in the production of echolocation calls which change throughout the process, initial phase which decrease, search phase, approach phase and lastly terminal phase. Transition between these phases, particularly the search and approach phase result in the overlap of echoes. The rate at which emission of echolocation impulses occurs are dependent on the stage of pursuit. Rate of emission during the search phase is 18/s while at the terminal phase the emission rate is 170/s (De la Torre and Medellín, 2010).

REFERENCES

Author: Joseph Ramkissoon
Posted online: 2016
Fig. 2. Wagner’s mustached bat active at night.

[http://www.iucnredlist.org/details/links/18709/0, downloaded 6 March 2016]

Fig. 3. Wagner’s mustached bats in their cave.

[http://www.iucnredlist.org/details/links/18709/0, downloaded 6 March 2016]
Fig. 4. Wagner’s mustached bats flying among obstacles.

[http://www.iucnredlist.org/details/links/18709/0, downloaded 6 March 2016]

For educational use only - copyright of images remains with original source