Platyrrhinus helleri (Heller's Broad-nosed Bat)

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

Fig. 1. Heller's broad-nosed bat, *Platyrrhinus helleri*.

[https://www.inaturalist.org/observations/763464 , downloaded 16 February 2016]

TRAITS. *Platyrrhinus helleri* is a medium-sized bat, about 58.2mm in body length; hind foot 11.5mm, ear 17.1mm, forearm 38.1mm, wing spread 304mm, and weight 15.6g. It is distinguished by prominent white stripes on its face (Fig. 1) and a fringe of stiff, dense, white hairs on the edge of the interfemoral wing membrane (Ferrell and Wilson, 1991). The leaf-nose of *P. helleri* is pointed and sharp and is used as a megaphone for echolocation. The hind legs and feet are partially covered in fur up to the claws and the species has no tail. The dorsal fur is pale, from buff to medium brown, and a white or cream line passes from the top of the head straight

down the centre of the back (Fig. 2). The ventral fur is generally a paler colour than the dorsal. The membranes of the wing are blackish brown and the top and bottom surfaces are covered in fur. The wings are broad and elliptically shaped and are covered in brownish-black fur on the upper and lower surfaces, extending beyond the elbow to the front part of the forearm with fur of whitish to pale buff colour (Ferrell and Wilson, 1991). The upper incisors are unevenly sized and have a trifid (three-pronged) cutting edge whereas the lower incisors have a bifid (two-pronged) cutting edge (Ferrell and Wilson, 1991). The teeth are adapted for eating fleshy fruits and small insects. The frugivorous members of the Phyllostomidae family fly relatively quickly and are agile in manoeuvring to avoid obstacles in their path to feed or roost.

DISTRIBUTION. Widespread range from Oaxaca and Veracruz, Mexico, through a broad part of northern South America, including parts of Peru and Bolivia, western Brazil and Trinidad (Tello and Velazco, 2003). It is a lowland species, generally found below 1000m (Ferrell and Wilson, 1991).

HABITAT AND ACTIVITY. Found in habitats such as tropical primary forests and humid canopy vegetation, *P. helleri* roosts in caves, tunnels, and under large leaves (Tello and Velazco, 2003). These bats have also been found in disturbed forests areas. They are abundant in a favourable environment but only seen in numbers when netted in the canopy. *P. helleri* were also found near waterways in Peru and in humid tropical forests in Panama near to banana groves (Ferrell and Wilson, 1991). In dry seasons, the bats are caught in mist nets over or near streams. Most often they are discovered roosting in pairs or small groups high in the crowns of trees (Fig. 3) or under palm leaves. These groups may consist of a male, female and young or an all-female group. According to Ferrell and Wilson (1991), *P. helleri* are most active during the late evening hours till about one hour before dawn. When compared to insectivorous bats, the frugivorous bats such as *P. helleri* are faster fliers (Wimsatt, 2012). Bats usually fly to a fruiting tree at the beginning of the night to obtain food. As the source of the fruit diminishes, the bats fly over long distance trips to identify another possible feeding source. Some bats return to their day roosts and others to their feeding roosts until the next day. This allows roosting partners time to exchange information about food sources. The roosting bats detect the odour of the fruit on the breath and fur of each other (O'Mara, 2014).

FOOD AND FEEDING. *Platyrrhinus helleri* have been classified as canopy frugivores but they also occasionally feed on insects (Lepidoptera). They search mainly for fruits which may grow in the canopy and sub-canopy levels of the forest. Heller's broad-nosed bats may also specialise on figs (Ferrell and Wilson, 1991). When stomach contents of 10 bats from Costa Rica were analysed, it was discovered that two of the bats ate fruits and insects and the other eight had only fruits in their stomach contents (Ferrell and Wilson, 1991). In Panama, a food niche overlap occurs between *P. helleri* and another fig specialist, *Artibeus phaeotis*. This family of bats do not feed while flying but instead usually eat their fruit while hanging from vegetation or in their places of shelter. They use their forearms to handle and turn the fruit while eating. Fig-eating bats show size preferences for specific types of figs and can recognise figs by odour. In the roosts, a bat may use information from many partners in the roost. If many bats retreat to the roost with a similar food scent, then this suggests that there is an abundant source of this food and the information is considered more reliable (O'Mara, 2014). This tells the bat that there is

possibly a tree with extremely ripe fruits or fruits which are tasty, nutritional and highly abundant.

REPRODUCTION. *P. helleri* show bimodal polyestry, with two breeding periods a year. Births usually occur in the dry season, particularly near the end, and in the middle of the wet season; months of birth peaks are March to April and then July to August (Reid, 1997). There were reports of pregnant females in Trinidad in the months of July and August (Ferrell and Wilson, 1991). The young are usually weaned at the start of the wet season where food is maximally abundant and it is considered most energetically favourable to raise young ones (Ferrell and Wilson, 1991).

BEHAVIOUR. When the bats are subjected to food deprivation, they go into a state of decreased physiological activity. Heller's broad-nosed bat does not respond to being approached or prodded and also do not make any audible sounds when they have no sources of food (Ferrell and Wilson, 1991).

APPLIED ECOLOGY. Heller's broad-nosed bat is not traded or used. It is also found in some protected areas within its range, and is not considered to be threatened (Miller et al., 2015).

REFERENCES

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O'Mara, M. T. (2014). Frugivorous bats evaluate the quality of social information when choosing novel foods. Behavioral Ecology **25(5):** 1233-1239.

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Fig. 2. Heller's broad-nosed bat with distinct white line down its back.

[http://www.uniprot.org/taxonomy/27658 downloaded 9 March 2016]

Fig. 3. Heller's broad-nosed bat roosting at night.

[http://www.inaturalist.org/observations/1651785 downloaded 9 March 2016]

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