

Mesoclemmys gibba (Gibba Turtle)

Family: Chelidae (Snake-necked Turtles)

Order: Testudines (Turtles and Tortoises)

Class: Reptilia (Reptiles)



Fig. 1. Gibba turtle, *Mesoclemmys gibba*.

[<http://www.chelonia.org/Phrynopsgibbus1.JPG>, downloaded 25 October 2012]

TRAITS. *Mesoclemmys gibba*, commonly known as the gibba turtle, was previously known as *Phrynops gibbus* (McCord et al., 2001). The upper region of the shell is known as the carapace which varies in colour from black to chestnut brown or dark grey (Jacksonville Zoo and Gardens, 2010). The carapace does not have a pattern. The length of an adult *Mesoclymmyx gibba* measures from 23-30cm. The carapace length in males however does not exceed 17cm (Murphy, 2014) and the size of hatchlings range from 43 to 48mm (Mittermeier et al., 1978). The ellipsoidal carapace can be slightly bowed with a shallow supracaudal notch (above the tail). Small posterior projections or low keels may be present on the 3rd to 5th broad vertebrals. Therefore the surface can either be slightly roughened, due to the uneven medial keel, or smooth (Jacksonville Zoo and Gardens, 2010). “Neural bones vary from none to five, but, if present, they are rudimentary and never contact the nuchal” (Pritchard and Trebbau, 1984). The bottom region of the shell is known as the plastron which varies in colour from yellow to red brown. It is wide and long, well-developed, somewhat inverted anteriorly with a deep anal notch posteriorly. On each scute there is a brown patch with a possible narrow yellow border occurring anteriorly and

posteriorly (Jacksonville Zoo and Gardens 2010). Scutes are the patches or scales in the carapace and plastron. The gulars refers to the throat of the *Mesoclemmys gibba* which are separated via the intergular scute however the humerals, situated below the gulars, are not. Marginals are the outermost scutes and are brown to yellow on the undersides and bridges. The head is flattened and relatively wide with large tympanum (ear) with an olive brown crown, red-brown to dark grey dorso-laterally and greyish to pale yellow ventrally (Jacksonville Zoo and Gardens, 2010). Convex scales are found dorso-laterally on the head with smaller scales between the tympanum and orbit than compared to the sides and top of the head. The un-notched upper jaw ranges between yellow to white with black bars, protruding snout and two small and yellow barbules on the chin (Fig. 2). The hind and forelimbs are bordered by large scale fringes. Both tail and limbs are grey-black with yellow limb sockets (Jacksonville Zoo and Gardens, 2010). The digits (toes) are extensively webbed (Murphy, 2014).

ECOLOGY. *Mesoclemmys gibba* reside in aquatic habitats (Bour and Zaher, 2005). They live in streams (Ferronato et al., 2010), small forest ponds, and rivers, mainly in closed-canopy situations and in bodies of water with muddy bottoms (Dixon and Soini, 1986) or stagnant or slowly flowing water (Mittermeier et al., 1978). They are found seasonally in both flooded and non-flooded situations (McCord et al., 2001). The distribution of *Mesoclymmys gibba* is widespread (Bour and Zaher, 2005) as they are found in Guyana, south-east Colombia, south-west/ north-east Venezuela, east Ecuador, central and north-east Peru, Bolivia, Brazil, Suriname, Paraguay and Trinidad (but not Tobago).

SOCIAL ORGANIZATION. *Mesoclemmys gibba* are not very social. They are shy and not confined to a specific habitat (Bohm, 2010) as long as conditions, with respect to habitat and food, are suitable. The most social interactions are seen with respect to mating.

ACTIVITY. *Mesoclemmys gibba* are nocturnal, although they are known to bask early morning or late afternoon sometimes (Mittermerier et al., 1978). They are very adaptable (Bohm, 2010) thus in “dry season aestivation occurs when temporary ponds become dry” (Murphy, 2014) “by burying themselves in mud near water holes” (Bohm, 2010) also their webbed feet allow them to stay immersed under water for long periods of time (Jacksonville Zoo and Gardens, 2010). They are also very “active during periods of rainfall” and come out from shaded areas in the day only to feed or breathe (Bohm, 2010).

FORAGING BEHAVIOUR. Due to their nocturnal nature foraging behaviour mainly occurs during nighttime, however they may eat at daytime (Bohm, 2010). *Mesoclemmys gibba* typical food items are “amphibian larvae, insects, worms, algae, plant seeds” (Bohm 2010) and in captivity they feed on, in the addition to the previous items, “meat, crustaceans, newborn mice, commercial dog food and plant matter” (Mittermeier et al., 1978). The convex scales and fringes permit them to identify prey vibrations in close vicinity as well as their large tympanum permit them to be very sensitive to sounds. When a prey is in close vicinity of its head, it carefully extends its head in the path of the prey and opens its mouth (Pritchard and Trebbau, 1984).

REPRODUCTIVE BEHAVIOUR. “Mating behavior is not described under natural conditions and data on natural reproduction are scarce” (Bohm, 2010). Therefore it is studied under captivity. Being nocturnal individuals, mating occurs at night (Niessen, 2007). Males sniff the

female's anal and marginal regions. Face-to-face contact is also observed. The males then quickly nod their head as a part of the mating system (Bohm, 2010). *Mesoclemmys gibba* come out of the water to lay their eggs. Two to four eggs are laid in a nest 10 cm deep (Mittiermeier et al., 1978) that are covered in leaves (Bohm, 2010). The eggs are white, hard-shelled and elongated (Jacksonville Zoo and Gardens, 2010) that have dimensions of 28 × 40mm. During the dry season is when the eggs are laid (Bohm, 2010) and after incubation of 200 days (Mittermeier et al., 1978) at temperatures of 25-27 °C they hatch during the rainy season (Bohm, 2010). The hatchlings break their eggshell with their feet by laying on their backs (Bohm, 2010) and they weigh between 18.6 g (Grossmann, 1989) to 28.0 g (Mittiermeier et al., 1978) depending on their size.

JUVENILE BEHAVIOUR. Juveniles are easy to care for but they do run a high risk of infections and necrosis if they are in low temperatures (Bohm, 2010). They are known to do some level of basking in the morning as well as evening like the adults (Mittermeier et al., 1978).

ANTIPREDATOR BEHAVIOUR. The species is gentle (Niessen, 2007; Grossman, 1989) but they do “possess musk glands at the rear parts of the bridge which are used for self-defense if the turtle is attacked or picked up” (Bohm, 2010). This is especially seen during the process of capture. Their carapace also provides a level of protection (Pritchard and Trebbau, 1984) with respect to its thickness and its colour. The colour mimics that of its surrounding therefore allowing them to camouflage themselves to a certain degree. Also their webbed feet that allow them to stay immersed under water for long periods of time (Jacksonville Zoo and Gardens, 2010) protects them from terrestrial predators.

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Fig. 2. Head of gibba turtle, with barbules on the chin.

[https://www.flickr.com/photos/renato_gaiga/7156762979/sizes/c/in/photostream/, downloaded 12 December 2014]

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