Chelus fimbriatus (Mata Mata Turtle)

Family: Chelidae (Snake-necked Turtles)
Order: Testudines (Turtles and Tortoises)
Class: Reptilia (Reptiles)

Fig.1. Mata mata turtle, *Chelus fimbriatus*.

[http://www.nationalgeographicstock.com/comp/MI/001/1228183.jpg, downloaded 30 November 2012]

TRAITS. The carapace or the upper shell of the *Chelus fimbriatus* turtle is very rough, as well as flattened. The overall carapace can reach 310-450 mm in length and weighs up to 17.2 kg (Somma, 2012). The carapace is usually oval shape, which is broad and low. The extremely rough texture of the carapace is due to the presence of three knobby, tuberculate keels that cause the areole of each vertebral and costal scutes to form an apex (Pritchard and Trebbay, 1984). The colour of the carapace is usually black or brown with a small plastron. The plastron has a salmon colour that eventually changes to yellow and brown, with a strong posteromedial notch and is also narrow (Benitez, 2011). The head is grotesque, flattened and broad that is triangular in shape. The head is comprised of a wide mouth, tiny anteriorly-situated eyes and a long tubular nose. Also there are numerous tubercles, as well as fleshy flaps that are present on the sides of the head, above each huge tympanum (ear) (Pritchard and Trebbay, 1984)**.** These turtles have a

snorkel-like snout, which comprises of a narrow fleshy tube; whereby the nostrils are located at the tip. The neck is comprised of papillose skin with a series of branched flat skin flaps which makes it thick and muscular. There are pink and black stripes on the under portion of the neck in juveniles (Somma, 2012). Violent lateral movements of the neck are produced by the massive longissimus dorsal muscle. The throat is usually reddish in colour. The limbs of this turtle are small with small digits. The limbs are comprised of papillose skin which is studded with pointed scales. Each forefoot contains five claws and the hind foot has four claws, where all are slightly webbed. The tail is also composed of papillose skin that is short and pointed (Pritchard and Trebbay, 1984). Sexual dimorphism exist with this species of turtle, whereby the males have a slightly longer and thicker tail as oppose to those of the females. Also the males have a concave plastron. These sexual differences usually develop when the turtle has reached maturity (Davidson, 2012).

ECOLOGY. *Chelus fimbriatus* turtles prefer tropical environments since they require a higher temperature (Pritchard and Trebbay, 1984). These are a very aquatic turtle that prefers slow moving, shallow, turbid water bodies to inhabit. These include marshes, swamps and brackish water streams that have a soft muddy bottom (Benitez, 2012). This turtle are hardly seen on land and thereby spends most of its time walking on the floor of its aquatic habitat. Their limbs are well adapted for walking and this makes them poor swimmers. They are never seen basking in the sun and not often seen floating or swimming around. Sometimes they are found in lakes, quiet inlets, ponds and creeks (Davidson, 2012). Due to the fact that they are feeble swimmers, they avoid habitats where there are a current present, for example, riverine situations (Pritchard and Trebbay, 1984). The mata mata turtle occurs in Trinidad in the Nariva Swamp and on the south west peninsula, possibly as accidental strandings from the Orinoco delta.

SOCIAL ORGANIZATION. There is no true social organization that exists in this species of turtle. *Chelus fimbriatus* is a solitary species that seldom interacts with other members of the same species. Only during the breeding season is when they interact with other members of the species (Davidson, 2012).

FEEDING BEHAVIOUR. *Chelus fimbriatus* hunts for its food during nighttime. Their diets are comprised of small fishes, amphibians, freshwater crustaceans, small mammals and there is a possibility that they also feeds on small birds (Benitez, 2012). Their small eyes allow them to use vision to detect the presence of prey. Also due to the presence of numerous fringes and skin flaps that are present on the lateral and ventral surface of the head, this allows them to detect the presence of a prey by vibrations when they are in close vicinity. The location of a prey can also be detected with assistance of their eyes. These turtles have large tympana (ears) that allows them to be extremely sensitive to sound. *Chelus fimbriatus* has a unique hunting technique. 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 Trebbay, 1984). They have highly developed hyoid muscles (Davidson, 2012); alongside with powerful throat muscles that causes great expansion of the throat. This expansion of the throat causes an inrush of water which contains the prey within it; therefore creating a suction action. The mouth is then closed in which the prey is swallowed as a whole and water is then expelled outwards (Pritchard and Trebbay, 1984). Therefore in the wild, these turtles prefer live food (Espenshade, 2012).

ACTIVITY. *Chelus fimbriatus* are active during both during the day and night, but hunts for its food mostly during nighttime. When this turtle respire, only the tip of the snout breaks the surface of the water and not the entire head. The effects of surface tension allow breathing to take place (Pritchard and Trebbay, 1984).

COMMUNICATION AND PERCEPTION. *Chelus fimbriatus* have excellent tactile and auditory senses but poor vision. There are sensory nerves that are present on the complex folds of skin on their body that assist to detect motion and vibrations (Davidson, 2012).

REPRODUCTION AND SEXUAL BEHAVIOUR. Breeding season for *Chelus fimbriatus* usually occurs once a year and this takes place from October through December. During mating the males open and close its mouth, while continuously extending its head towards the female. Also during this courtship, hyperextension of the legs from the shell and movements of the lateral flaps occur. *Chelus fimbriatus* are polygynous, whereby the males can mate with more than one female (Davidson, 2012). They only venture out of the water on land to lay their eggs (Davidson, 2012), and usually their eggs are laid close to its habitat (Pritchard and Trebbay, 1984). *Chelus fimbriatus* prefers to nest on open sandbanks, but sometimes nest on vertical riverbanks comprising of a clayey soil types (Pritchard and Trebbay, 1984). They also place decaying vegetation on their nest to hide it from predators. This turtle can lay 12-28 eggs per clutch and has an incubation period of 200 days (Davidson, 2012). After the eggs are laid, there would be no other contact between the nest site or the juveniles and the mother. Therefore there is no parental care for the juveniles of *Chelus fimbriatus.*

JUVENILE BEHAVIOUR: *Chelus fimbriatus* juveniles are able to fend for themselves since no parental care exists in this species of turtle. They may sometime swim in an awkward manner, whereas the adult prefers walking on the muddy floor of its habitat (Pritchard and Trebbay, 1984).

ANTIPREDATOR BEHAVIOUR. *Chelus fimbriatus* inhabits areas that allow them to blend in with the surrounding environment. For example, it resembles a dead leaf that is floating on water (Kirkpatrick, 1992). Algae sometimes grow on its shell that gives a predator the illusion that it is a rock. This allows them to hide from predators such as caimans, as well as a camouflage technique when hunting and ambushing a prey for food. Also due to the fact that they have a thick carapace, this allows them to be hidden and protects them to a certain degree (Pritchard and Trebbay, 1984).

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Posted online: 2012

Fig. 2. *Chelus fimbriatus* breathing through snout at water surface.

[http://www.photomazza.com/IMG/jpg_La_Matamata_Chelus_fimbriatus_sembra_una_foglia_morta_galleggiante_c_Giuseppe_Mazza.jpg, downloaded 30 November 2012]

Fig. 3. Side view of the *Chelus fimbriatus* head with its snout in an upward position.
[http://qilong.wordpress.com/2012/09/24/whatawhata-matamata/, downloaded 30 November 2012]

Fig. 4. *Chelus fimbriatus* camouflaged among dead leaves as part of its anti-predator behaviour as well as its hunting strategy to hide from prey before ambushing it.
[http://farm8.staticflickr.com/7124/7046205523_ef37f5ee59_n.jpg, downloaded 30 November 2012]