

## ***The Feeding Behaviour of Volutidae snail, *Melo melo* (Lightfoot, 1786)***

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### ***Introduction***

The Volutidae snail, *Melo melo* (Lightfoot, 1786), is a rather huge gastropod which exhibit a long siphon used for tracking its environment as well as sourcing for food. Its huge shell is used for storing water, which leads it to be commonly known as “Baler Volute”. The distribution of this species is restricted to Southeast Asia, from Burma, Thailand and Malaysia, to the South China Sea and the Philippines (Poutiers, 1998; Bail, 2009).

This large sea snail is known to live in littoral and shallow sublittoral zones. It usually dwells in muddy and sandy bottoms at a maximum depth of nearly 20 m (Poutiers, 1998). *Melo melo* is known to be carnivorous, where it uses its large foot to enclose the prey. It is a specialized predator of other continental shelf predatory gastropods, notably *Hemifusus tuba* (Melongenidae) and *Babylonia lutosa* (Buccinidae)(Morton, 1986). It is also a known predator of the dog conch, *Strombus canarium* (Strombidae)(Cob *et al*, 2009). However, information on the preference of prey by this Volutidae snail is very limited. Therefore, this paper attempts to study the feeding behaviour of *M. melo*, including the predatory mechanism and its behaviour towards different preys.

### ***Materials and method***

At the beginning of the experiment, the *Melo melo* snails, being a carnivore, were exposed to four different types of prey (*Perna viridis*, *Pugilina cochlidium*, *Murex trapa* and *Lunella cinerea*) (Figure 1), to determine which preys were preferred as well as to know the behaviour of the snails towards those preys. Following to that, *Melo melo* specimens that were found to be feeding, were sent to the observation glass tank in order to observe its feeding mechanism. All the observations were recorded via taking pictures and notes.

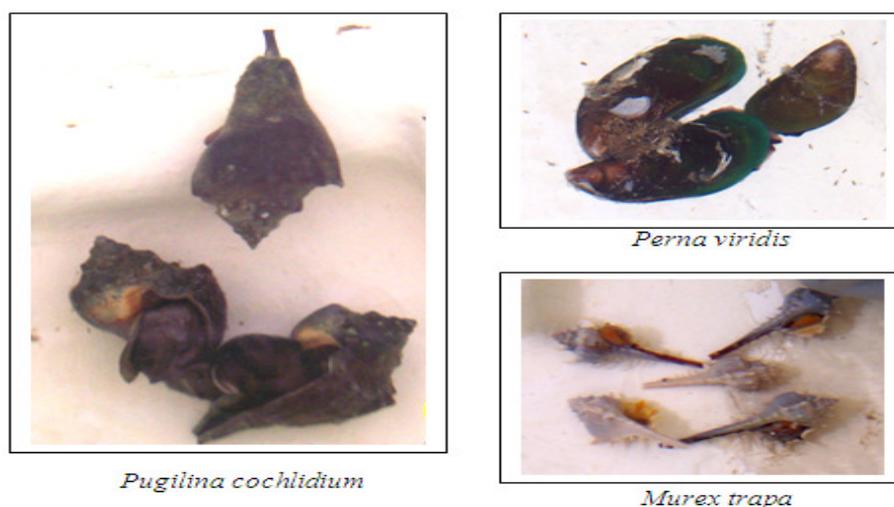


Figure 1. Different types of preys used for the feeding preference experiment of *Melo melo*.

### Results and discussion

From the experiment, *Melo melo* would sense the presence of preys using their siphon as well as sensing the surroundings. The snails only prey on *Pugilina cochlidium* and *Murex trapa*; and these two preys have the same possibilities to be chosen as prey. During the feeding process, the *Melo melo* snail would engulf and enveloped its prey before the prey is eaten and digested. The eating process took at least one hour or more. A series of photographs showing the feeding behavior is shown in Figure 2. Initially the Volutidae snail used its siphon to trace the prey. Once the prey was detected, the snail would move towards the prey and eventually grabbed the prey with its huge meaty foot. The snail then engulfed the prey with its huge foot until the prey was asphyxiated. The prey was moved towards the radula teeth with the movement of the snail's jaw (Thompson & Slinn, 1959). The snail was known to excrete choline esters liquid to paralyze the prey (Andrews *et al.*, 1999; Tan, 2000). The proboscis of the snail would enter and digest the prey. After digesting the meat, the empty shell of the prey was released.

### Conclusion

It was observed that the siphon of *Melo melo* snail played an important role in the searching the prey, while the huge foot played an important role in engulfing the prey until the prey had been asphyxiated. The duration of the feeding process varies depending on the individuals as well as the degree of hunger of the Volutidae snail.



Figure 2. A series of photographs showing the feeding behaviour of *Melo melo* on *Murex trapa*.

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