Chemoreception in spider conch, *Lambis lambis* (Mollusca: Gastropoda)

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Extracts of sea weed, clam, fish, crab, acid, base and commercial agar were used in chemoreception tests of *Lambis lambis*. This species exhibited a faster response towards extracts of red algae (*Hypnea musciformis, Hypenea valentiae* and *Gracilaria corticata*) than towards other extracts.

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INTRODUCTION

Gastropods possess a sensory organ referred to as the osphradium. It consists of patches of epithelium located on the posterior margin of each afferent gill membrane and they function as chemoreceptors. The osphradium can also detect the amount of sediment in the inhalant current (Barnes 1987). The gastropods receive stimuli through the respiratory current. The time needed for olfactory detection may vary between species.

Four types of reaction to stimuli have been described: positive response where the animals tries to reach the stimulus as fast as possible; negative response where the animal turns away from the stimulus; defense response where the animal contracts and try to avoid exposure to the stimulus; escape response where the animal tries to move away from the stimulus.

The present study was carried out in connection with studies on feeding biology of *Lambis lambis*, which inhabit shallow areas, sandy and muddy in nature at depths ranging from 4-16 m (Siraimeetan *et al.* 1988).

MATERIALS AND METHODS

L. lambis were collected at Vellapatti, off Tuticorin. The animals were kept in tanks of the laboratory. They were starved for 7 days before the olfactory tests. All the animals measured about 13.5 cm in length. Tests were performed in rectangular tanks containing filtered sea water.

Extracts were made of plants and animals: red algae *Gracilaria corticata, Hypnea musciformis* and *H. valentiae*, green algae *Ulva lactuca*, brown algae *Sargassum wightii*, the clams *Meretrix meretrix* and *Donax cuneatus*, cuttlefish *Sepia brevimana*, crab *Cancer* Sp., and fish *Sillago sihama* were selected and about 50 g were homogenized (1:1; v/w). 10 g of industrial agar was boiled in 100 ml distilled water and cooled in a Petri dish. 50% Nitric acid was prepared using distilled water; sodium chloride, calcium carbonate, potassium iodide and copper sulphate were dissolved in distilled water, and added at 1:1 % concentrations.

Two ml organic extracts were dropped on Whatman No.1 filter paper and air-dried. The dried filter paper was placed in the center of the experimental tank. Animals were placed in each of the 4 corners of the tank and the time recorded for eversion of proboscis, and the time to reach the stimulant. Change of behaviour was recorded at 30 min intervals. The inorganic compounds were dropped near the siphon from a 5 ml filler. Immediate