

## Blue-ringed Octopus

### Fact Sheet

#### Introduction

Species of Blue-ringed octopus (*Hapalochlaena* spp.) are common in marine waters around Australia. The common species in Moreton Bay, South-east Queensland, is *Hapalochlaena fasciata*. Another closely allied species with blue rings, *Hapalochlaena lunulata*, is confined to the tropical waters of northern and western Australia. A third species, *Hapalochlaena maculosa*, is found in southern Australian waters. All species are very dangerous and, as a result of bites, there have been at least two fatalities and several near fatalities.

#### Biology

In Moreton Bay, *H. fasciata* is found in both the intertidal zone (the area between high and low tides) and the subtidal zone (the area below low tide). Typical habitats are under rocks, in crevices and in rock pools of sheltered inshore areas. This species is small and rarely exceeds 150 mm across its outspread tentacles. Most individuals are a mottled yellowish-brown with dark brown bands and irregular faint blue circles scattered over the tentacles and blue lines on the mantle. For this reason *H. fasciata* is often called the Blue-lined Octopus. When an individual is disturbed these colours darken and the rings become a vivid peacock blue.

*Hapalochlaena* species are carnivorous and use powerful venom to immobilize their prey. Two large salivary glands provide venom via the salivary duct to the mouth, which possesses two beak-like jaws. There are no fangs and the venom enters the wound as saliva, rather than being injected. The venom contains two toxins: maculotoxin, which is very similar, if not identical to tetrodotoxin (present in the flesh of many poisonous fish, e.g. Toad or Puffer Fish); and hapalotoxin, which is less toxic to humans, but possibly of greater importance for the capture of prey. It has been suggested that maculotoxin has a defensive role against predatory fish as it does not affect crabs, the usual prey.

When hunting crabs, the octopus swims over its prey and sprays poisonous saliva into the surrounding water. The victim absorbs the venom and is paralysed in minutes. Alternatively, prey may be captured with the tentacles (which bear long rows of suckers) and paralysed by a venomous bite. Prey is usually torn apart before being eaten.

The eggs of the Blue-ringed Octopus are large (7.5 x 3.0 mm), firm and capsule-like. Usually between 100 and 200 eggs are laid. The female guards the eggs at all times and occasionally removes debris from the egg mass with jets of water from her siphon. This action also aerates the eggs. No food is taken by the female during the period of egg development (about two months) and she dies shortly after the eggs hatch. The young develop for another four months before they are fully mature.

#### Bite and Symptoms

Blue-ringed Octopus are normally not aggressive and attack only when provoked. They are, however, the most venomous octopus in the world and the salivary glands of one individual may contain enough venom to paralyse ten men. The actual bite is often relatively painless and may go unnoticed. If sufficient venom has been introduced (sometimes little venom may enter the wound if the attack occurs under water), the victim will notice numbness or tingling around the face and neck within a few minutes.

Difficulty in seeing or speaking is often followed by trouble with breathing and sometimes vomiting. Weakness and lack of co-ordination usually progress to paralysis, which may last from four to twelve hours. If resuscitation is not given when breathing difficulty and paralysis begin, the victim will fall unconscious and die from lack of oxygen. Death can occur within thirty minutes.



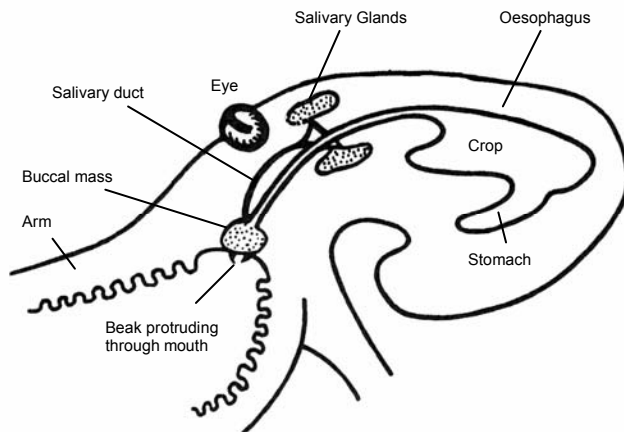
Well camouflaged, resting Blue-ringed octopus.



Irritated Blue-ringed octopus flashing its warning colours.



The best protection against Blue-ringed Octopus' bites is to avoid contact at all times. Most attacks have occurred when an octopus is removed from the water. If a specimen is seen, no attempt should be made to molest or capture it.



Venom apparatus of *Hapalochlaena*.

### First Aid

The first aid recommended by Queensland Poisons Information Centre (phone 131126) is to immediately use Pressure Immobilisation Bandaging (a firm bandage is applied to the area of the wound and if the bite is on a limb, an immobilising splint). The victim should be taken to a hospital for professional attention. If necessary, prolonged mouth to mouth resuscitation and external cardiac massage should be given until medical attention is reached.

### Further Reading

Covacevich, J., Davie, P. & Pearne, J. (Eds), 1987, *Toxic Plants & Animals*, Queensland Museum, Brisbane.

Edmonds, C., 1989, *Dangerous Marine Creatures*, Reed Books Pty. Ltd., Frenchs Forest, N.S.W.

Norman, M & Reid, A., 2000, *A Guide to Squid, Cuttlefish and Octopuses of Australasia*. Gould League & CSIRO, Melbourne.

[http://www.health.qld.gov.au/poisonsinformationcentre/bites\\_stings](http://www.health.qld.gov.au/poisonsinformationcentre/bites_stings)

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