

10 Cephalopods

OVERVIEW

Cephalopods are a carnivorous and highly mobile group of molluscs. The ecology and life history of the smallest squid species *Idiosepius notooides* is described, followed by an account of the life history, behaviour and ecology of one of the larger cephalopods, the giant cuttlefish *Sepia apama*, which forms unique, vast spawning aggregations in upper Spencer Gulf. Lastly, the ecology of four common octopods is discussed. These are: the two small, venomous octopuses, *Hapalochlaena maculosa* and *Hapalochlaena fasciata*; the western gloomy octopus *Octopus cf. tetricus*; and the Maori octopus *Octopus maorum*. These octopuses are voracious carnivores, and the last two species are significant predators of lobsters; their interactions with lobster fishing are briefly discussed.

INTRODUCTION

This chapter pursues the theme of the last chapter on molluscs and considers a specialised class, the Cephalopoda, which contain three major Orders – cuttlefish, squid and octopus. In the last two Orders the shell is completely lost or is vestigial.

CEPHALOPODS

Cephalopods are an ancient and highly evolved group of molluscs. Aristotle described aspects of their life history in ~330 BC (cited in Boyle and Rodhouse 2005) in these terms: ‘These molluscs are all carnivorous; and ... the calamari and the sepia are more than a match for fishes of even the largest species. The octopus for the most part gathers shellfish, extracts the flesh, and feeds on that; in fact fishermen recognise their holes by the number of shells lying about’. The name cephalopod, which means ‘head-foot’, was first applied because of the fusion between the two. The head, which contains the eyes and brain, also has attached to it a circle of tentacles or arms, equivalent to the foot on other molluscs. The trunk is surrounded by the mantle, and this has evolved to enable the mantle cavity to fill with water, which is ejected forcibly through a funnel. In this way, the animal can jet propel itself through the water, forwards or backwards, with impressive speed. However, jet propulsion is generally used only for escape from predators. Normal swimming in cuttlefish and squid is achieved by undulating their narrow lateral fins, whereas octopuses crawl over the seabed.