

CROCODYLIANS CLOSER UP

Today's crocodylians are the product of a very long evolutionary history (Chapter 2). Deconstructing them, they can be thought of as sophisticated lever-systems (skeleton) covered by skin for protection and operated by muscles (this chapter), moving within their habitat (Chapter 4), including underwater (Chapter 9), under the control of coordinating sense organs and brain (Chapter 5). These components all require an energy supply to fuel their operation, including the respiratory and blood systems (Chapters 7, 8), and we can think of the remaining organ systems – that is, the alimentary system and other viscera (Chapter 6), the kidneys and salt glands (Chapter 11) and so on – as support systems for the supply and distribution of energy to the muscles, skin, sense organs and brain, and the maintenance of a suitable cellular environment for their operation, all within an appropriate temperature range (Chapter 10). All of these systems, indeed the whole life of an individual crocodylian, as in all living individuals, support reproduction for the successful production of another generation of individuals (Chapter 12) and for maintaining the population and the species (Chapter 13).

This Chapter is a brief introduction to the external features of the living crocodylians and the skeletal and muscular elements that make up the lever system that supports the body and causes its movement. More detailed anatomical information is included as appropriate in the relevant chapters.

THE EXTERNAL FEATURES OF CROCODYLIANS

Crocodylians are sturdy lizard-shaped reptiles, with a short and not very flexible neck (Fig. 3.1). They are specialists for a life in and near the interface between water and land. The head, trunk and limbs are well armoured by horny skin and scales and the tail has a distinctively jagged upper edge. They are well adapted for aquatic life, with a laterally compressed tail and webbed hind feet, and eyes, ears and nostrils mounted high on the head so they can continue to see, hear and smell even while the bulk of their body is almost completely hidden under the water's surface. The nostrils and ears (imperfectly) can be sealed to keep water out when the animal is completely submerged and a third eyelid, the nictitating membrane, protects the eye under water. There is a rigid plate of tissue at the rear of the oral cavity, the palatal flap, which closes the throat against the entry of water.

There is no obvious external sign of their sex apart from adult males growing much larger than females: the penis and clitoris are discreetly hidden. The alimentary, urinary and reproductive systems empty into a single cavity, the cloaca, with only one external opening, visible as a longitudinal mid-ventral slit a little posterior to the origin of the hind legs (vent in Fig. 3.7). This, too, is under muscular control to keep