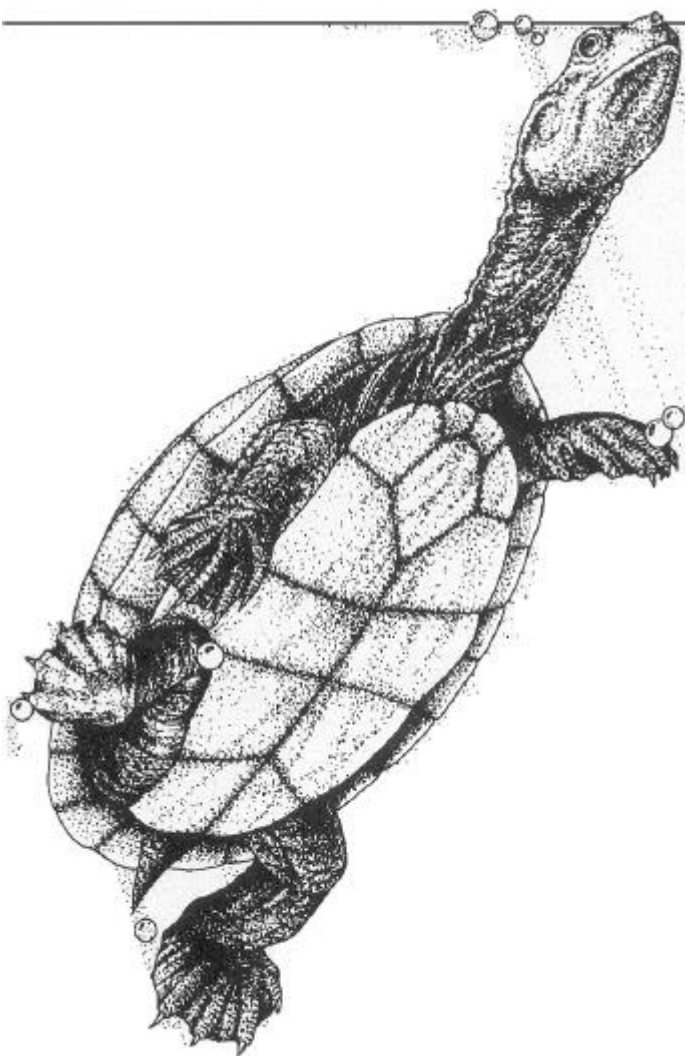


TURTLE C A R E



MELBOURNE ZOO

INTRODUCTION

Several species of turtles are commonly kept as pets in Victoria. These notes are designed to assist owners who have no previous experience with these reptiles. The order Chelonia contains a number of families variously known as turtles, tortoises or terrapins. There are no hard and fast rules about these terms. As a guide the term 'turtle' applies to marine forms which are generally large, have paddle-like limbs and live in the sea from which they emerge only to lay eggs. Land tortoises' vary in size, have domed Shells, club-like feet and rarely enter the water. There are no true land tortoises native to Australia. Many other forms have more flattened shells, webbed and clawed feet, inhabit freshwater and frequently venture on to land. These are variously known as freshwater turtles, terrapins or water-tortoises. In Australia they are usually called 'freshwater turtles'. The common Australian turtles belong to the family Chelidae, the 'Side-necked Turtles'.

Freshwater turtles have two distinct shell surfaces- the upper shell or *carapace* and the lower shell or *plastron* which are joined on each, side by a *bridge*. They all have clawed feet and like lizards and snakes, they shed their skins. This usually happens early in spring when the individual shields (or scutes) of the shell lift and flake off, and pieces of skin from the head, neck, legs and tail peel away from the underlying new skin.

Freshwater turtles most commonly kept as pets in Victoria are the Eastern Long-necked (or Snake-necked) Turtle and two short-necked species, the Murray (or Macquarie) Turtle and the Mary River Turtle. The Murray Turtle is the largest of the three, reaching 35cm in length, and has a dull olive-brown,

slightly flattened carapace and a cream plastron. The Mary River Turtle has a rich brown carapace that has a distinct ridge or keel, particularly in small specimens, and the edges are strongly serrated. The plastron is cream and most individuals are 20-30cm in length. The Long-necked is probably the most widely kept species and reaches 25cm in length. The carapace is dull brown to black and the plastron is cream with the individual shields outlined in black. As its name suggests, this species has a long, snake-like neck. In very young specimens the plastron is marked with reddish- orange patches. If roughly handled Long-necks will exude a clinging foul-smelling fluid from glands adjacent to the bridge.

CHOOSING YOUR TURTLE

Before obtaining your turtle check with the Department of Conservation and Natural Resources to make sure that you are allowed to keep that particular species and whether you need any permits. The only legitimate sources of turtles are licensed pet shops and breeders. You may not collect turtles from the wild. When choosing your animal, make sure that it is quite active and pulls its head back if touched. Its eyes should be bright and clear, and its nose and mouth clear of any mucous or saliva. Check the shell and skin for any signs of fungus (white or soft areas). These may be difficult to eradicate.

The shells of young turtles may be rubbery due to an incorrect diet. Depending on the age of the animal this condition can often be reversed with a change of diet. When picked up, a turtle should not feel too light as this could indicate starvation, dehydration or disease.

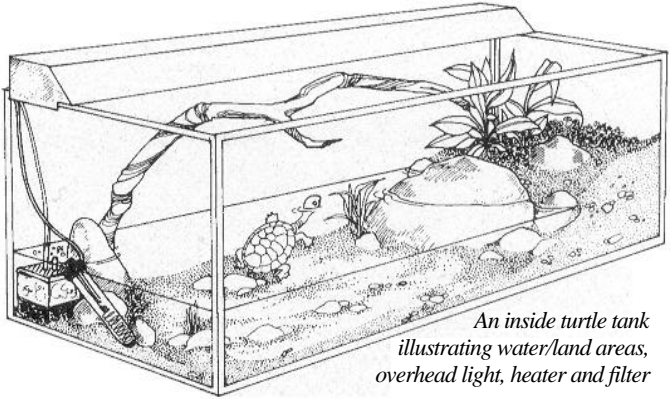
The claws are quite sharp so take care when handling a large turtle. Some turtles, especially the short-necked species, can, and sometimes will, deliver a painful bite. Also remember to support the animal as much as possible during handling. Adult specimens can be transported in calico or cotton bags or in a box, but it is not advisable to transport several together as the weaker animals may be trampled or deprived of fresh air. Give them a good soak before departure and on arrival to prevent dehydration. Do not put any rocks or branches etc., in the bag with the turtles and remember to keep the bag out of extremes of temperature and draughts. It is probably wise not to handle the turtle until it has adjusted to its new surroundings.

H I B E R N A T I O N

Where winters are cold, reptiles, including turtles, spend this time of year in a dormant state known as hibernation. Turtles can't control this. Low temperatures slow down the animal's bodily functions until they are ticking over just enough to maintain life. Heart rate, breathing and all physical movement are all extremely slow and this condition is maintained until temperatures rise sufficiently for active life to be resumed.

At the onset of winter turtles bury themselves in soil under bushes or logs, or in the mud at the bottom of ponds. Whilst hibernating their requirements for oxygen are so low that they can absorb enough through their skins from the water. Because their digestive systems slow down, turtles should not be fed for a month or so before cold weather is expected. This will allow the digestive tract to be emptied before hibernation commences. Food in the stomach of a

hibernating reptile will decompose, often killing the animal. If turtles are kept warm during winter they will not hibernate, although their appetites may be reduced

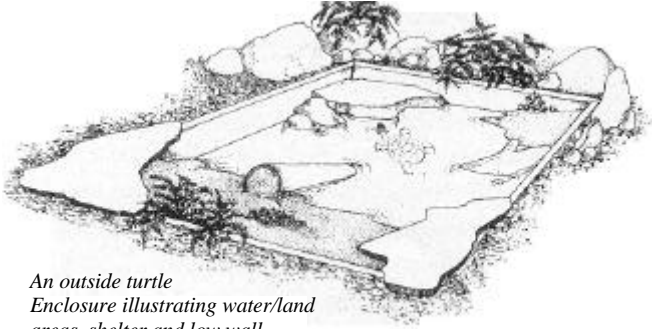


An inside turtle tank illustrating water/land areas, overhead light, heater and filter

HOUSING

Young turtles up to 10cm diameter can be adequately housed in a glass aquarium and up to four specimens of this size can be maintained in the standard 60 x 30x 30cm tank. The water must be deep enough for the animals to submerge themselves completely and swim freely, while the land area must be large enough for them to walk around and become completely dry. The easiest method is to place a piece of clean house brick at one end of the tank so that its upper surface protrudes 2-3cm above the water. Then place a piece of flat rock against this to provide both wet and dry hiding places as in the diagram. Ensure that the rock cannot collapse onto the turtle. An alternative is to use a large piece of clean terracotta plant pot. Sand or gravel can be used for the land area and plants can be included to provide a natural setting, but such materials can

make the tank difficult to clean and act as a source of disease



An outside turtle enclosure illustrating water/land areas, shelter and low wall

The tank must be kept as clean as possible. Change the water as soon as it becomes dirty but ensure that the temperature of the new water does not differ greatly from that of the old. A small box filter will assist in making these changes less frequent.

Young turtles are best kept warm all year round and only allowed to hibernate after their second year. A water temperature of 22-25°C can be maintained by using a submersible heater or by placing the tank near an external heat source. In the wild turtles like to warm themselves by basking in the sun. In captivity they will bask under a light globe suspended over the dry rock so that the temperature directly below is between 25 and 31°C. Another advantage of basking in the sun is that the ultra-violet rays in the sunlight result in the production of vitamin D which promotes proper calcification of bone. A lack of vitamin D may result in shell and bone deformities. The best alternative to sunlight is a particular type of fluorescent tube known as Vita-lite which can be obtained from pet-shops.

Once the turtle exceeds 12cm in shell length, both Long-necks and Murray Turtles can be kept outside all year round. The Mary River Turtles can be placed outside in summer but Melbourne winters are probably too severe for this species. The minimum sized enclosure is a fenced or walled area 4m x 2m. The wall should be 60cm high and made of a smooth material such as fibro-cement or galvanised iron. Chicken wire should not be used as turtles injure themselves trying to push through it. One end of the enclosure should have a pond 2m x 2m from 30-50cm deep. One section of the edge should be sloping for ease of access and a large rock or log should be placed half out of the water for basking. You will need to be able to clean the pond frequently so it must be easily drained. Do not be concerned about algae growing on the turtle's shell as a light covering is natural. The land area can be grass or fine gravel. A sheltered area, possibly a corner, should be provided to allow the animals to escape from very high temperatures in summer and also from cold winds and rain in winter.

From about April to September the turtles will be inactive and spend most of their time buried under a bush or log, or on the bottom of their pond. The sheltered area can be a man-made structure, some low-growing bushes or a pile of rocks or logs.

Turtles will not feed during the winter. As with any reptile a turtle will only feed and should only be fed when it is at the correct temperature. Failure to do so may lead to illness or even death. A good guide as to when to feed your turtle is if it appears very active and seems to be searching for food. This usually occurs in mid to late spring.

When a turtle begins to recognise a particular person or activity, it will associate this with food and expect to be fed. Care should be taken not to overfeed the animal as this may result in obesity . How much to give your turtle will depend on its individual preferences but do not offer so much that food is continually left. As much food as will fit into a matchbox and offered two or three times a week is usually adequate for an average-sized turtle. In general, the turtle should be fed in water at a temperature of 23-30°C. A temperature below 20° will cause digestion problems and one above 32° may lead to regurgitation.

Australian turtles are basically carnivorous although some of the short-necked varieties will eat some vegetable matter such as lettuce, endive and pieces of fruit, etc. They will only feed in the water. Raw fish, yabbies, shrimps and worms can be offered, with young turtles also taking live water insects such as daphnia and mosquito larvae. If feeding meat, do so sparingly and make sure it is lean. Calcium is important in turtles diets and can be provided by kneading calcium powder or bone-flour into finely chopped or minced meat and freezing it. When it is required, break off a small piece, thaw it out and break it into pieces immediately. This process reduces the possibility of the supplement being washed off. Additional calcium may be provided by submerging a small block of solidified Plaster of Paris in the water. This dissolves gradually, releasing some usable calcium

P R O B L E M S

Adult turtles are very hardy animals and in most cases a break in the shell will heal by itself if kept clean and

an antiseptic or antibiotic cream applied. If it is serious, consult a veterinary surgeon, for the injury may need to be patched using fibreglass fabric after the initial cleansing. If the turtle has difficulty in breathing, has discharge from the nose, gapes with its mouth open, holds its head up continually or is lethargic, it may have a respiratory infection. Consult a veterinary surgeon for treatment.

Young turtles sometimes develop swollen areas of skin around the neck, legs and eyes. This is usually a bacterial infection which will require specialised treatment. Puffy eyes can also be caused by a Vitamin A deficiency. Another problem which is sometimes seen in young turtles is fungus. This is usually seen as small whitish areas first on the feet and then spreading to the face and tail. This can usually be treated but a veterinary surgeon should be consulted for the correct treatment. Sick or injured turtles should always be kept warm (23,30°C).

B R E E D I N G

Freshwater turtles must be at least 12cm long before they can be sexed accurately. Males have a slightly concave plastron and a longer tail than a female of a similar size. However these characteristics are not usually very obvious in Long necks. In some older turtles the female attains a larger overall size than the male. Australian turtles mate in the late spring with egg laying taking place in early summer. While the eggs do have a brittle outer shell, they are not hard like hens' eggs. An average-sized female Long-neck will lay 10-12 eggs while a Murray Turtle will lay from 15-25.

The eggs are best incubated buried in deep sand at

27-29°C. If fertile, Long-neck eggs will hatch in 60-75 days and those of Murray Turtles after 45-55 days. The young turtles should be placed in a clean tank separate from their parents and raised as previously described.

FURTHER READING

The following publications are of value if you wish to know more about your turtle.

Cann, John. (1978). *Tortoises of Australia..*

ANGUS & ROBERTSON, SYDNEY

Cogger, Harold G. (1992). *Reptiles and Amphibians of Australia.* (Fifth edition). A.H. & A.W. REED

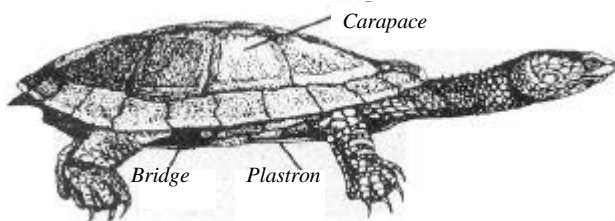
FRENCHS FOREST.

Ehrmann, Harald. (1992). *Encyclopedia of Australian Animals-Reptiles.* COLLINS, ANGUS & ROBERTSON, SYDNEY

Goode, John. (1967). *Freshwater Tortoises of Australia and New Guinea.*

LANSDOWNE PRESS, MELBOURNE

A FRESHWATER TURTLE SHOWING THE THREE MAIN SECTIONS OF SHELL



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