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TORTOISES AND TURTLES

Asian Leaf Turtle

Cyclemys dentata

A dark brown, leaf-shaped turtle from forest streams and damp forest in South-East Asia. The shell is low-domed and serrated at the rear, and the head and neck have red to orange stripes. Adults spend most of their time on land, while the young live in the water. The species needs a large, humid aquaterrarium and clean water, and it is shy.

Family: Geoemydidae Former name: *Cyclemys dhor; Cyclemys orbiculata; Cyclemys ovata*

KEY FACTS

THE ANIMAL

Adult size	**15-25 cm** total length incl. tail
Lifespan	**15-25 years**
Active	**At dusk and at night**
Lifestyle	**Semi-aquatic**
Habitat	**Rainforest and wetland**
Difficulty	**Intermediate**

CARE

Min. enclosure	**130 × 65 × 75 cm** L × W × H for 1 adult
Temperature, day	**24-27 °C**
Basking spot	**30-32 °C**
Temperature, night	**22-25 °C**
Humidity	**70-90%**
Water	**Aquaterrarium** depth 15-20 cm
Water temperature	**22-26 °C**
UVB	**Recommended** Ferguson zone 1
Diet	**Insects, fruit, complete diet, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**84-120 months**
Clutch size	**2-4 eggs**
Clutches per year	**1-5**
Incubation	**90-110 days** at 26-28 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Near Threatened (NT)**

About the species

Cyclemys dentata has an oval, low-domed shell that is light brown to blackish brown, sometimes olive, often with fine black rays. A low keel runs along the middle, and the rear edge is serrated. The name refers to the toothed edge of the shell. The plastron is yellow to light brown, often with dark rays, and in adults there is a transverse hinge, so the shell can be partly closed but never fully. The head is brown with dark spots, and the neck and head have distinct red to orange stripes, which can fade in old animals. Juveniles have a yellowish-brown plastron with dark marbling and narrow, pale stripes on the head and neck.

Carapace length is 15-25 cm. Females grow slightly larger than males, while males have longer and thicker tails.

The taxonomy of the genus *Cyclemys* is a muddle. For a long time only one or two species were recognised, and in the trade almost all leaf turtles are sold as *C. dentata*. Genetic studies from 2008 split the genus into seven species, including *Cyclemys oldhamii*, *Cyclemys atripons* and *Cyclemys fusca*. The species can be hard to tell apart by appearance, and the head pattern varies so much within a single population that several researchers regard some of them as variants of the same species. The range of each individual species is therefore uncertain, and an animal in the trade is not always *C. dentata* in the strict sense. The names *Cyclemys ovata* and *Cyclemys dhor* are older synonyms.

Most animals in the trade are wild-caught, but captive-bred animals are becoming more common and are preferable. The animals are shy, hide a great deal and are not suited to handling.

The greatest known age in captivity is just under 15 years, but the species probably lives longer.

Read more: Buying animals: captive-bred, wild-caught and transport

Distribution and habitat

Cyclemys dentata occurs in South-East Asia from Myanmar and Bangladesh through Thailand, Cambodia and Vietnam to Malaysia and Singapore. To the south and east it lives on Sumatra, Java, Bali, Borneo and the Natuna Islands and in Brunei, and in the Philippines on Palawan and the Calamian Islands. Genetically, the species is confirmed on Java, Borneo and the southern Philippines. On Sumatra, in Malaysia and in Singapore the animals are also regarded as this species, but they have not been studied genetically.

On the mainland the range is uncertain, because several closely related *Cyclemys* species live in the same areas and have been confused with one another. Records from India, Nepal and China are therefore not reliable and are not shown on the map. The genus lives mostly in the lowlands but has been found above 1,000 metres. In Singapore it is rare and restricted to forest streams.

> **Native range:** Bangladesh, Myanmar (Burma), Thailand, Cambodia, Vietnam, Malaysia, Singapore, Indonesia, Brunei and Philippines.

HABITAT

The species lives in clear, shallow forest streams and small rivers in the lowlands and low mountains. Adults spend most of their time on land in damp forest near the water, while the young are more aquatic. In the wild the species is most active at dusk and at night, and it is shy and hard to spot.

The climate is tropical and humid, with high humidity all year round. The streams have a silty or stony bed, and the forest floor is covered with leaf litter, roots and fallen trees, where the animals can burrow and hide. The species is omnivorous and takes both small animals and plant matter.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

There is little husbandry knowledge about *Cyclemys dentata*, and it is based on experience from the hobby, not on studies. The set-up is therefore also based on the species' habitat in forest streams. The incubation time is borrowed from a related species (see under breeding), and growth rate is not documented.

An adult needs an aquaterrarium of at least 130 × 65 × 75 cm (length × width × height): five times the shell length in length and half that in width. Half of the floor area is a shallow, sloping water section, and half is damp land. Juveniles under 15 cm can be kept in a smaller enclosure for a time, and they need only 5-10 cm of water. Adults need 15-20 cm of water with a sloping bottom, so that there is both shallow and deeper water. An open pool is not suitable, because the humidity must be high. The species is not social and should be kept singly, at least in an enclosure of minimum size.

The land section needs a 10 cm thick, damp layer of topsoil and coconut fibre, preferably 60% soil and 40% coconut fibre, covered with leaf litter and sphagnum, so that the animal can burrow. Provide plenty of hiding places with cork, roots, hollow logs and plants. All equipment must be positioned so that the animal cannot climb out. Time outdoors in summer requires that the night temperature stays above 21 °C. The enclosure must be predator-proof and shaded all day.

Read more: Incubating eggs

TEMPERATURE

By day the air should be 24-27 °C, and the basking spot should be 30-32 °C. At night 22-25 °C is suitable. The water is kept at 22-26 °C; this figure is an estimate based on the air temperature.

Measure the surface of the basking spot with a digital thermometer. A cluster of two low-wattage heat bulbs above the basking spot is enough, and the heat is switched off at night. Do not use ceramic heaters or coloured bulbs. The temperature must not exceed 32 °C for long periods, and there must always be shade at the cool end.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be 70-90%, preferably around 80% by day and higher at night. It is maintained by misting twice a day, a thick, damp substrate layer with leaf litter, and damp hides filled with sphagnum at the cool end. Measure with a hygrometer in the middle of the enclosure.

The water must be clean. Use a low-flow filter and change about a third of the water every week or every other week. Keep ammonia and chlorine out. The species is sensitive to poor water. Food and faeces must be removed regularly.

LIGHTING AND UVB

The species is a forest dweller and needs weak UVB with shade for the rest. Use a T5 UVB tube for shade-dwellers (Ferguson zone 1), e.g. 5-6%, in a reflective fitting above the land section and the basking spot. The tube should be about half as long as the enclosure. The top of the shell should be about 20 cm below the tube. Replace the tube every year, because UVB output declines.

The light is on for 12 hours a day. Animals kept outdoors do not need UVB but must have shade all day.

Read more: Lighting and UVB

FEEDING

The species is omnivorous and eats both animals and plants. Juveniles are fed every day or every other day, adults 2-3 times a week depending on body condition. Do not give more than the animal eats up, so that it does not become overweight.

Animal food consists of earthworms, snails, Dubia roaches, crickets, mealworms, silkworms and small live fish. Fruit, e.g. figs, strawberries, raspberries and watermelon, is given in small amounts. Food on land is placed in a shallow dish, and turtle pellets are given in the water. A cuttlebone in the enclosure provides calcium, and animals that do not get a varied diet need calcium and vitamin supplements.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Cyclemys dentata is shy and hides a great deal, and the species is not suited to handling. If you want contact, feed with tongs. Keep the animals singly, and provide plenty of hiding places and plants to avoid stress. In the enclosure the animals also come out by day, especially at feeding time.

Breeding

SEXUAL MATURITY AND SEXING

Males have a longer and thicker tail than females, and females grow slightly larger. Females reach sexual maturity after 7-10 years, males slightly earlier. A reliable weight or size for breeding is not documented, and females must be fully grown and in good condition before they lay.

MATING

Mating and the breeding season in captivity are not documented for the species. Breeding requires a large, humid enclosure with plenty of hiding places, so that the animals can keep out of each other's way.

EGG-LAYING AND CLUTCHES

A clutch is typically 2-4 elongated, white eggs of about 55 × 30 mm. The female digs a nest 13-18 cm deep in damp soil, and there can be up to four or five clutches a year. The female's plastron is slightly flexible, so that the large eggs can pass. Give her a deep land section with loose, damp soil.

INCUBATION

Incubation is not documented for *C. dentata*. The figures are borrowed from the related *Cuora mouhotii*: the eggs are laid in damp vermiculite at 26-28 °C and hatch after 90-110 days. The eggs are not turned.

REARING THE YOUNG

The hatchlings are about 56 mm long in the shell at hatching and live mostly in the water. Keep them singly in a small aquaterrarium with 5-10 cm of water, a small land area, hides and UVB. Feed them daily on small earthworms, snails, insects and small fish. They grow slowly, and growth rate is not documented.

Health and common mistakes

The species is sensitive to errors in husbandry, and most problems are caused by water and climate. The typical errors are:

- Poor water quality with ammonia and chlorine, which causes illness. Use a filter, and change the water regularly.
- Air that is too dry. Humidity must be kept at 70-90%.
- Lack of UVB, calcium and D3, which causes soft shells and deformed growth.
- Overfeeding and obesity, especially in adults.
- Stress in newly acquired wild-caught animals. Give them peace, hides and stable conditions.

See a reptile-experienced vet if the animal does not eat for several weeks, has swollen eyes or soft shell, or sits with its mouth open.

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.