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TORTOISES AND TURTLES

Reeves' Turtle

Mauremys reevesii

Mauremys reevesii is a small, semi-aquatic turtle from China and Korea with three keels on the shell and yellow markings on the neck. Males reach 10-12 cm carapace length, females typically 13-20 cm, and the animal can live for more than 20 years. The species is threatened in the wild and does well in a filtered aquarium with a dry land area and a warm basking spot.

Family: Geoemydidae Former name: *Chinemys reevesii; Geoclemys reevesii; Emys reevesii*

KEY FACTS

THE ANIMAL

Adult size	**10-23 cm** total length incl. tail
Weight	**200-1,450 g**
Lifespan	**15-20 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Wetland**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 65 cm** L × W × H for 1 adult
Temperature, day	**24-29 °C**
Basking spot	**29-35 °C**
Temperature, night	**18-22 °C**
Humidity	**50-80%**
Water	**Aquaterrarium** depth 25-40 cm
Water temperature	**21-27 °C**
UVB	**Recommended** Ferguson zone 2
Diet	**Insects, complete diet, plants, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**5-8 eggs**
Clutches per year	**1-2**
Incubation	**65-90 days** at 26-29 °C

PROTECTION AND PAPERWORK

CITES	**Appendix III**
EU annex	**Annex C**
IUCN	**Endangered (EN)**

About the species

Mauremys reevesii is a small to medium-sized freshwater turtle and the smallest species in the genus. The shell (carapace) is brown with three distinct keels, the skin is dark grey, and there are yellow markings on the neck and head. The iris is yellow. All measurements in the text are carapace length.

Females grow clearly larger than males. Adult males measure about 10 cm and rarely more than 12 cm, while females average about 13 cm and can reach 20 cm. Males weigh about 200 g, females about 550 g, and large females up to 1.45 kg. A large-headed form (called *megalocephala*) can reach about 23 cm and has a strikingly broad head with powerful jaw muscles. Taxonomically the form is uncertain, and it is possible that the broad head results from a diet of many hard-shelled prey.

Males turn black with age. This begins at about 4 years of age at the earliest and spreads from the eyes to the claws, the skin and finally the shell, so that the yellow markings and the yellow iris disappear. Old females may also darken a little. Sex can only be seen from about 3 years of age.

M. reevesii hybridises readily with other species in the family, even distantly related ones, and at least one "species" described from the trade has proved to be a hybrid. Keep the species apart from *Mauremys sinensis*, *Mauremys mutica*, *Mauremys japonica*, *Cuora amboinensis* and other species in the family, and choose animals of known origin.

More than 20 years in captivity is known, and 10-15 years is a realistic minimum with good care. The species is lively and curious, but not a pet to be handled. It is threatened in the wild by loss of habitat, hunting (the plastron is used in traditional Chinese medicine), collection for the trade and competition from released *Trachemys scripta*. The species breeds well in captivity, and captive-bred animals are therefore the only responsible choice.

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

Distribution and habitat

Mauremys reevesii is native to eastern and central China and the Korean Peninsula. The populations in Japan and Taiwan are now regarded as introduced in historical times, and there is also a small population in Timor-Leste. The map shows only the native range in China and Korea.

Hybridisation with species that live wild in the areas where *M. reevesii* has been introduced is regarded as a threat to the native species.

> **Native range:** China, South Korea and North Korea.

HABITAT

M. reevesii lives in slow-flowing or still fresh water with a soft bottom and many aquatic plants: ponds, marshes, canals, streams and flooded rice paddies. The species is semi-aquatic and leaves the water to bask on rocks and logs.

The climate in the range is temperate to subtropical with distinct seasons. In central China the species brumates from the end of October to March, when night temperatures fall below 15 °C, either in the water under plant cover or buried a few centimetres in the soil. The diet is omnivorous.

Care

THE ENCLOSURE

Keep the animal in an aquarium, a large tank or a pond, not in an ordinary terrarium. The tank must be at least five times as long as the shell of the largest animal and half as wide as it is long, with the land area counted as part of the floor area. The dimensions in the specification box, 120 × 60 × 65 cm, suit an adult of up to 23 cm and give a water section of 80 × 60 cm with 25-40 cm of water and a land area of 40 × 60 cm. The same size is enough for a pair; the third and fourth turtle need at least 10 % more floor area, and from the fifth 20 % more. Hatchlings can initially be kept in a small aquarium with about 20 litres of water, but soon set up an enclosure for an adult animal.

The water depth must be at least 1.5 times and at most 3 times the carapace length. The species is not a strong swimmer: water that is too deep is a risk, and so is water that is too shallow, because a turtle that has flipped onto its back must be able to right itself again.

The land area must be large enough for the whole animal to climb completely out of the water and dry off. Build it as a beach or shelf with a rough ramp and a flat stone as the basking spot. Provide a hide under the water where the animal cannot get stuck, and place stones and driftwood securely. Live plants are torn to pieces; artificial plants without sharp edges work well. The bottom can be bare, or gravel or sand can be used that is either so large that it cannot be swallowed or so fine that it passes through unharmed.

The set-up must be escape-proof. An outdoor pond in summer is responsible if it is enclosed with a fence that goes into the ground and mesh over the top. Animals must never be released into the wild.

Read more: Heat and temperature

TEMPERATURE

The water should be 21-27 °C, the air above the water 24-29 °C and the surface of the basking spot 29-35 °C. Heat with a spotlight over the basking spot, and measure with a digital thermometer with a probe in the water and an infrared thermometer on the basking spot. The temperature in an aquarium with a lid often differs from that of the room, so check it regularly.

The water heater must have a plastic guard and an automatic cut-off. Switch the lamps off at night. The night temperature is not documented; 18-22 °C suits a temperate climate. The species brumates in the wild, but brumation in captivity and the temperatures for it are not documented. Day length can follow the season. If the animal is lethargic or does not eat, the temperature may be too low.

Read more: Brumation and the seasons

HUMIDITY AND WATER

Air humidity is not documented in detail; 50-80 % in the room is ample. What matters is that the land area can dry out completely and that the water is clean. The turtle defecates in the water, so use a powerful filter, change part of the water regularly, and remove uneaten food after feeding.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water is the animal's home and must be clean and warm. The water depth is 1.5-3 times the carapace length, so 25-40 cm suits adults. The temperature is 21-27 °C.

Turtles produce far more waste than fish. Choose an external filter rated for at least twice the water volume, and let it filter both mechanically and biologically. Rinse the filter media in water from the tank, not from the tap, and never use soap. Put all electrical equipment near the water on a circuit with a residual-current device.

LIGHTING AND UVB

A heat lamp over the basking spot is a must, so that the animal can climb completely out of the water and warm up. UVB is recommended: the species is diurnal and basks a great deal, and UVB helps the animal synthesise vitamin D3 and absorb calcium. For *M. reevesii* UVB has not been shown to be strictly necessary if the diet contains plenty of D3, but a T5 tube over the basking spot is the safe solution. The Ferguson zone is not documented for the species; zone 2 is a cautious estimate, and the UV index should fall with distance from the basking spot, so that the animal can choose for itself.

Glass and plastic block UVB, and tight mesh blocks a large part, so there must be nothing between the tube and the animal. Tubes lose strength and must be replaced regularly. The light is switched on for 11-13 hours a day. Outdoors the sun provides both heat and UV, and extra light is then not necessary.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

FEEDING

M. reevesii is omnivorous and takes both animal and plant food. The turtle eats only in the water, so throw the food into the tank. Prepared food for aquatic turtles with 30-40 % protein, low fat content, vitamin D and a calcium-to-phosphorus ratio of at least 2:1 covers a large part of the diet.

In addition, give fish, earthworms, cockroaches, crickets, shrimp and aquatic snails from farmed stock, as well as greens: leaf lettuce, dandelion, clover, chickweed, duckweed, water hyacinth and water lettuce. Fruit is an occasional treat. Juveniles need more protein and calcium than adults and are fed every other day, adults less often. Too much food causes overly rapid growth and shell deformities and burdens the water.

Add calcium and vitamins as needed, and keep the diet varied, so that vitamin A deficiency does not develop.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

M. reevesii is diurnal and lively. The animal cannot tolerate being handled beyond what is necessary: pick it up only to check its health or to move it. Lift it with both hands around the shell, and wash hands before and after.

The species is not social, but can be kept with other animals of the same species if there is plenty of space and many hides. Both sexes can be dominant or territorial, and in the mating season the males chase the females. If there is persistent aggression, the animals need more space or must be separated. Do not keep the species with other species of the genus

because of hybridisation.

Breeding

SEXUAL MATURITY AND SEXING

Sex can only be seen from about 3 years of age. The female grows larger than the male, and the male has a longer, thicker tail with the vent located beyond the edge of the shell. The age and size at sexual maturity are not documented.

MATING

Mating takes place in the water in the warm part of the year. The male courts actively and may chase and bite the female, so give her plenty of space and hides and separate the animals if she is chased continuously. Hybrids with other species in the family are common, so keep only animals of the same species together if you want to breed.

EGG-LAYING AND CLUTCHES

Egg-laying falls from late May to late July, mostly at dusk and dawn. A female typically lays 5-8 eggs per clutch, and she can lay two clutches in the same season. The eggs weigh about 7.5 g and measure about 36 × 19 mm. The nest is dug about 9 cm deep in moist soil close to the water. Give the female a box with at least 15 cm of moist soil or sand on the land area, even when she is kept without a male, so that she does not retain the eggs.

INCUBATION

Sex is determined by the incubation temperature: above 30 °C gives mostly females, below 26 °C mostly males. The eggs hatch best at 26-29 °C. At 29 °C incubation takes about 70 days (63-75), at 26 °C about 85 days (79-92), and at 23 °C more than 110 days. At 32 °C and above far fewer eggs hatch, and the young are smaller. 29 °C in vermiculite and water in the ratio 1:1.2 by weight gives the best hatch.

The eggs are placed in moist vermiculite and must not lie in water. A substrate that is too dry lengthens incubation slightly and gives hatchlings with a slightly narrower shell; otherwise moisture matters little.

Read more: Incubating eggs

REARING THE YOUNG

The young fend for themselves from hatching. They measure about 23-24 mm and weigh about 3.5 g. Give them water at a depth of at least 1.5 times the carapace length, a basking spot they can easily climb onto, and hides. They need more protein than adults: feed them every other day with prepared food for young turtles, worms, shrimp and snails, and offer greens. Sort them by size so that the larger ones do not bite the smaller ones.

Health and common mistakes

Turtles hide illness, so watch for changes. Weigh and measure the animal once a month and keep a log of weight, appetite and behaviour.

Signs of illness: - Swollen or sunken eyes - Listing in the water or inability to dive - Open mouth, foam around the mouth or bubbles at the nose - Excessive basking or refusal to enter the water - Refusal to eat - Uneven growth, discolouration or sores on the skin and shell

Typical problems: poor water quality causes skin, shell and ear infections; lack of opportunity to dry out completely causes shell rot; lack of D3 and calcium causes metabolic bone disease (MBD) with a soft, deformed shell; a one-sided diet causes vitamin A deficiency.

All reptiles can be symptom-free carriers of Salmonella. Wash hands before and after contact with the animal, the water and the equipment. See a vet with experience in reptiles if the animal loses weight, does not eat or has swollen eyes.

Read more: Quarantine and hygiene Read more: Common diseases and signs of illness

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.

The full guide with map and updates: herpy.org/en/tortoises-and-turtles/mauremys-reevesii