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TORTOISES AND TURTLES

African Pancake Tortoise

Malacochersus tornieri

Malacochersus tornieri is a small East African tortoise with an unusually flat, thin and flexible shell. It lives on rocky hills in dry savanna and scrub, where it flees into narrow rock crevices instead of withdrawing into its shell. The shell is 15-18 cm long, the female lays only one egg at a time, and the species is critically endangered in the wild.

Family: Testudinidae Former name: *Testudo tornieri; Testudo loveridgii*

KEY FACTS

THE ANIMAL

Adult size	**15-18 cm** total length incl. tail
Lifespan	**20-30 years**
Active	**By day**
Lifestyle	**Rock-dwelling**
Habitat	**Semi-desert, savanna and rocky terrain**
Difficulty	**Experienced**

CARE

Min. enclosure	**100 × 60 × 40 cm** L × W × H for 1 adult
Temperature, day	**24-28 °C**
Basking spot	**32-35 °C**
Temperature, night	**18-22 °C**
Humidity	**30-50%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 2
Diet	**Plants**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1 eggs**
Clutches per year	**1-4**
Incubation	**120-185 days** at 28-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix I**
EU annex	**Annex A**
IUCN	**Critically Endangered (CR)**

About the species

Malacochersus tornieri is a small tortoise and the only species in its genus. The shell (carapace) is 15-18 cm long, and it differs from that of all other tortoises: it is flat, thin and flexible, because the bony plates beneath the horny scutes have large openings. This makes the animal light and fast, but the shell offers little protection. In newly hatched young the shell is domed, as in other tortoises, and it only flattens out as the animal grows.

The carapace is light brown to yellowish brown, often with a dark, radiating pattern on each scute, and the plastron is pale yellow with dark seams. The head and limbs are yellowish brown. The legs are slender with strong claws, and the animal climbs quickly and surely. Females are slightly larger than males.

The species was described in 1903 and is named after the German zoologist Gustav Tornier. The genus name comes from the Greek words for soft and dry land. Pattern and colour vary greatly from animal to animal.

Distribution and habitat

Malacochersus tornieri lives in southern Kenya and in northern and eastern Tanzania. There are also small populations in northern Zambia, and the species has been reported from Malawi. It was described from Busisi on Lake Victoria in Tanzania. An introduced population probably exists in Zimbabwe.

Populations are scattered and isolated, because the species is found only where suitable rocky hills exist. It lives from the lowlands up to about 1,800 m above sea level. Since 1981 Kenya has required written permission for export, and because the species is listed on CITES Appendix I, wild-caught animals may not be traded commercially across borders. The animals in the trade are therefore captive-bred.

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

> **Native range:** Kenya, Tanzania and Zambia.

HABITAT

Malacochersus tornieri lives on kopjes: isolated rocky hills and boulder piles in dry savanna and thorny scrub with acacias and *Commiphora*. The climate is semi-arid with a short rainy season and a long dry season, and the days are hot.

Its whole life is tied to the rock crevices. The animals emerge for only an hour or so at a time, mostly in the morning and late in the afternoon, to feed and warm up, and they rarely move far from their refuges. When threatened they run to the nearest crevice, squeeze in and wedge themselves there, probably by pressing the back against the roof and inflating the body with air, so that they can hardly be pulled out. Several animals often share the same crevice. In the hottest months they may aestivate under flat stones, but they do not hibernate. The diet consists of dry grasses, herbs and succulents such as aloe, and they take fallen fruit if they find it. The female lays her egg in loose, sandy soil, mostly in July and August.

Care

THE ENCLOSURE

Little detailed knowledge exists on the care of *Malacochersus tornieri*, and wild-caught animals are very difficult to acclimatise to captivity. Temperature, humidity, UVB and incubation are therefore based partly on the habitat and partly on other tortoises from dry regions.

The terrarium must provide room for movement and climbing, and the most important feature of the set-up is rock crevices. An animal of 15-18 cm needs at least 100 × 60 × 40 cm, and a pair at least 120 × 60 × 40 cm. Build stable stacks of flat stones and slate slabs so that crevices form which the animal can squeeze into, and make sure the stacks cannot topple. Crevices that are too wide are not used, and crevices that are too narrow can trap the animal. Keep the gap between the slabs to a few centimetres, and make several crevices so that the animals can each go their own way.

The substrate is a dry mix of sand, soil and gravel, 5-10 cm deep. The terrarium should be open at the top or well ventilated, because the species is kept dry. Put an opaque strip along the front of the glass so that the animal does not try to climb up the pane. The animal is a skilled climber, so all edges and lids must be secured. On warm summer days it benefits from an outdoor enclosure with rock stacks, dry plants and shade, but it must be indoors at night.

Read more: Lighting and UVB Read more: Humidity, misting and ventilation Read more: Incubating eggs

TEMPERATURE

By day the temperature should be 24-28 °C, and at night 18-22 °C. The species prefers lower temperatures than many other tortoises and does not spend long in the sun, but a local hot spot of 32-35 °C lets it warm up when it wants to. Use a radiant heat lamp with a thermostat at one end, and place shelters in shade at the cool end, so that the animal can choose for itself.

The species does not hibernate and must be kept warm all year.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be low, 30-50 %. The terrarium should be dry, but a small dish of clean drinking water must always be available. Change the water daily. A shelter in one of the rock stacks can be lightly misted now and then, so that there is a more humid microclimate to retreat into. The substrate must dry out again afterwards, because persistent damp causes respiratory infections and shell problems.

Young animals dry out more easily than adults and can be given a short bath in lukewarm, shallow water once or twice a week.

LIGHTING AND UVB

Malacochersus tornieri is diurnal and is most active early and late in the day. UVB is necessary when the animal is kept indoors: Ferguson zone 2, corresponding to a UV index of 2.0-3.0 in part of the terrarium. The shelters must be positioned so that the animal can withdraw from the light when it wants to. The lighting follows the seasons, with 12 hours a day. Glass and acrylic block UVB, and a UVB tube loses strength over time and should be replaced according to the manufacturer's instructions.

FEEDING

The diet is dry and high in fibre. Offer dry grasses, hay and wild herbs such as dandelion, clover and vetch, and include succulents such as aloe and stonecrop. Dark green salad leaves can be used, and fruit is only an occasional treat in small amounts. Insects and other animal food are not necessary.

Dust the food with a calcium supplement, and leave a cuttlebone available. Both adults and young are fed daily in small amounts. Too much protein and too much fruit cause overly rapid growth and a deformed shell. The shell is soft and thin, so plenty of calcium and UVB are especially important.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Malacochersus tornieri is shy, but active and persistent. It climbs, hides and comes out only when things are quiet. It does not withdraw into its shell, but runs towards the nearest crevice and squeezes in when disturbed. The shell is soft and thin, so the animal must never be lifted by the shell with a hard grip, and it should be handled as little as possible. Lift it gently under the belly with both hands, and do not let it fall.

In the wild the animals live together in crevices and tolerate each other. In the terrarium one male and one female can be kept together, but males can injure each other seriously, especially when there is only one female, so two males must not be kept together. If there are several animals, there must be many crevices, and if there are signs of bullying, the animals must be separated.

Breeding

SEXUAL MATURITY AND SEXING

The female is slightly larger than the male. Sex is hard to see in young animals. Age and size at sexual maturity are not documented, and the lifespan of 20-30 years is an estimate based on other small tortoises.

MATING

The mating season in the wild is January-February, but animals in captivity can breed all year. Males fight over females, and the male bites at the female's legs before mounting her. Give the female plenty of hiding places and the chance to get away, and separate the animals if she is injured. Further details on mating are not documented.

EGG-LAYING AND CLUTCHES

The female lays only one elongated egg at a time. She can lay several eggs during a season at intervals of four to eight weeks, but the total number per year is not documented; 1-4 is an estimate. She digs a nest of about 10 cm in loose, sandy soil, so give her a box of deep, dry sand and soil.

INCUBATION

The incubation period is 4-6 months, around 185 days at low humidity. The egg is incubated at 28-30 °C in an incubator with dry to slightly moist vermiculite, and it must not be turned. Sex depends on the incubation temperature, but the threshold between males and females is not known for the species.

REARING THE YOUNG

The hatchlings are 3-5 cm long and independent from the first day. The shell is domed at hatching and only flattens out with growth. Give them the same set-up as adults, with shelters and rock crevices, and feed them daily with dry herbs and grasses. Further rearing data are not documented.

Health and common mistakes

Wild-caught animals are often in poor condition, and the species is difficult to acclimatise to captivity. The shell is soft and thin and can be damaged by pressure, falls and too hard a grip.

- Shell damage and deformities: too rapid growth, too much protein and fruit, and too little calcium and UVB.
- Respiratory infection: runny nose and wheezy breathing in cold and persistent damp.
- Dehydration: especially in young animals, with lethargy and sunken eyes.
- Parasites: new animals should be checked with faecal samples.

Contact a vet with reptile experience if the animal is not eating, is losing weight or has loose droppings. New animals must be quarantined before they are put together with other tortoises.

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/malacochersus-tornieri