herpy

TORTOISES AND TURTLES

Egyptian Tortoise

Testudo kleinmanni

Testudo kleinmanni is the smallest tortoise of the genus: a pale, high-domed desert tortoise of 10-13 cm from the coastal areas of Libya, Egypt and southern Israel. It is diurnal, a pure herbivore and critically endangered in the wild. Its care requires dry, warm conditions all year, no hibernation and complete separation from other tortoises.

Family: Testudinidae Former name: *Testudo werneri*

KEY FACTS

THE ANIMAL

Adult size	**10-13 cm** total length incl. tail
Weight	**150-300 g**
Lifespan	**20-50 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Desert and semi-desert**
Difficulty	**Experienced**

CARE

Min. enclosure	**105 × 50 × 30 cm** L × W × H for 1 adult
Temperature, day	**20-28 °C**
Basking spot	**32-36 °C**
Temperature, night	**15-20 °C**
Humidity	**40-60%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Plants**
Kept	**Singly, in pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**60-120 months**
Clutch size	**1-4 eggs**
Clutches per year	**1-3**
Incubation	**80-120 days** at 30-33 °C

PROTECTION AND PAPERWORK

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

About the species

Testudo kleinmanni is a small, high-domed tortoise with a shell in sandy yellow, often with a greenish tinge. The scutes of the carapace have dark brown edges, but the centre lacks the dark blotch that characterises *Testudo graeca*. In older animals the dark colour may disappear entirely. The plastron is pale yellow, usually with two dark, V-shaped markings on the middle scutes, as in *Testudo marginata*. The head and legs are a pale ivory yellow. The thighs have no spurs, the tail has no horny tip, and the forelegs have very large, overlapping scales, even in newly hatched juveniles. The rear part of the plastron is hinged in both sexes.

All measurements in the text are shell length. Males are 9-10 cm and females up to 13 cm, a few up to 15 cm. Females weigh up to about 300 g and males about 150 g. The male is slimmer, has a longer tail and a more elongated shell, but not the concave plastron that males have in the other species of the genus.

The species was described in 1883 by Louis Lortet and is named after Édouard Kleinmann, who collected the type specimen. The form from the Negev, which for a time was regarded as a separate species (*Testudo werneri*), does not differ genetically and is now regarded as the same species.

Distribution and habitat

Testudo kleinmanni is found along the southern coast of the Mediterranean in north-eastern Libya (Cyrenaica), northern Egypt, northern Sinai and southern Israel (the north-western Negev). It lives no more than about 120 km from the coast. Its occurrence in Tripolitania in western Libya is not reliably documented, because the animals there may have been introduced by humans.

The species is critically endangered (CR) on the IUCN Red List. Its habitats in Egypt have been almost destroyed, and only a few scattered populations remain. Collection for the trade and habitat loss are the greatest threats. For a short period about 2,800 animals, roughly half of the then known population, entered the trade.

> **Native range:** Libya, Egypt and Israel.

HABITAT

Testudo kleinmanni lives in desert and dry steppe areas near the coast: compact sand and gravel, scattered stones, low, sandy dry riverbeds, scrub and salt coastal meadows. Rainfall is very low, about 50 mm a year. Winter is mild and humid: the daytime temperature on average does not fall below 17-18 °C, and nights are 9-10 °C. In summer the temperature rises to about 45 °C.

The animal is active for most of the year. In spring, when the desert turns green and blooms, food is most plentiful. In the cold season it is most in evidence in the middle of the day, in the hot season in the morning and evening, and for the rest of the day it stays hidden under bushes or in rodent burrows. From June to August it digs in for four to eight weeks, depending on the weather, and on very cold nights it digs in briefly. What the animal eats in the wild is not documented.

Care

THE ENCLOSURE

Testudo kleinmanni is a small tortoise with great demands on its conditions. Keeping it outdoors in a temperate climate cannot be recommended: the species is kept in an open tortoise table, an enclosure or a heated greenhouse or conservatory. The length must be at least 8 times and the width 4 times the shell length of the largest animal. Less space is often used successfully, but the general recommendation is 8 × 4 times the shell length. For a female of 13 cm that gives about 105 × 50 cm, and larger is better, especially for a group. The side walls must be about 30 cm high. A table that can be divided in two makes it easy to keep males and females separately.

The substrate is a mixture of about 60 % loamy soil and 40 % sand in a layer of 5-10 cm, so the animal can dig in. Provide a potted plant for shade, flat stones to climb on and a dry hide at each end. A shallow, wide dish of fresh water must always be available. Clean the dish daily.

The species must be kept completely separate from all other tortoises. It is very sensitive to foreign disease organisms, and contact with other species causes serious respiratory and intestinal parasite problems, which can quickly become fatal for such a small animal.

TEMPERATURE

By day the air should be 20-28 °C with a basking spot of 32-36 °C under a heat lamp, measured with an infrared thermometer, so that the animal can choose for itself between warm and cool places. The basking spot temperature is an estimate based on the climate and the other *Testudo* species. Higher is not better: above 30 °C in the air activity falls, and in the wild the animal digs in during the heat.

At night the lamps are switched off, and the temperature may fall to 15-20 °C, but not lower. A weak heat mat under part of the floor may be necessary at night. The species should not hibernate, because winter is mild in its range, and a summer dormancy as in the wild is difficult to imitate safely. It is therefore kept active all year at a moderate temperature.

Read more: Heat and temperature Read more: Brumation and the seasons

HUMIDITY AND WATER

The humidity is not documented for the species. 40-60 % suits a dry coastal climate with humid winters, and the table should have a dry end and a slightly dampened end. Keep the soil dry, not wet, and replace damp material often. For drinking and bathing a shallow dish is used; small animals are bathed briefly in lukewarm water so they drink.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

T. kleinmanni is diurnal and needs strong, white light and a warm basking spot. Provide UVB as for *Testudo hermanni*: a T5 tube or a strong UVB bulb for desert species (Ferguson zone 3, about 10-12 % UVB) over the basking spot. Glass and plastic between the light source and the animal block UVB. Replace the light source according to the manufacturer's instructions, because UVB output falls long before the light goes out.

The light is switched on 12-14 hours a day in summer and slightly shorter in winter.

Read more: Lighting and UVB

FEEDING

T. kleinmanni is herbivorous. The diet must be high in fibre, low in protein and rich in calcium and consist of wild herbs, grasses, leaves and flowers. Dandelion and clover are the best. Fruit is not part of the diet; a small bite of tomato is the most. Greens from the shop are only a supplement. Avoid plants that may have been sprayed.

Aim for slow growth, and avoid overfeeding. In the wild food is scarce for large parts of the year, and too much food causes a lumpy (pyramided) shell and kidney damage, as does too much protein. Dust the food with calcium, and leave a cuttlebone available so the animal can gnaw at it itself. Without UVB the calcium supplement must contain D3 and be given daily. In the wild the animal also eats snail shells and eggshells for the calcium. Water must be available at all times.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The species is diurnal and calm and likes to dig into the substrate. It is unusually vocal for a tortoise: both sexes make sounds, and the male coos during mating like a dove. Handle the animal as little as possible, and always support the plastron. A fall is dangerous for such a small shell.

The animal tolerates its own kind and can be kept singly, in pairs or in a small group, but must never come into contact with other species. Keep the sexes apart outside the breeding season so the females get peace. Provide several hides, and avoid moving the animal around.

Breeding

SEXUAL MATURITY AND SEXING

The male has a longer tail and a more elongated shell than the female, who is larger. The animals reach sexual maturity at 5-10 years of age. The males are adult at 9-10 cm and the females at about 12-13 cm. Use only fully grown, healthy animals in good condition for breeding.

MATING

In the wild mating is seen in March. In captivity the animals mate in spring and again from August to November. The male circles the female and rams her shell, but does not bite. He calls with his mouth open, and mating often lasts 20 minutes or more. Females carrying eggs do not arouse the male's interest; in the pause after a laying series the males become interested again.

EGG-LAYING AND CLUTCHES

The female digs a nest 3-5 cm deep in sand or loose soil and lays from March and April onwards. She usually lays one egg at a time, occasionally two, and large females up to four at once. Three to four weeks pass between layings until she has laid 4-5 eggs, and then follow two to four months without eggs. A female can produce up to three clutches in a season. The eggs are elongated, about 32 × 23 mm, and weigh 7-9 g. Give the female at least 5 cm of deep, loose sandy soil; even 2-3 cm is enough for her to lay.

INCUBATION

The eggs are placed in an incubator on the surface of vermiculite or sandy soil and are not buried. The humidity must be 70-80 %, but it is not critical. At 30-33 °C the eggs hatch after 80-120 days; in the wild it can take 70 days. Development is irregular: it is slow for the first month to six weeks and then speeds up, and up to three months can pass before anything can be seen. After the hatchling has opened the egg, it stays in it for a few days until the yolk sac has been absorbed. Sex depends on temperature, but the limits are not documented for the species. 30 °C probably gives males and 33 °C females, as in *Testudo graeca*.

Read more: Incubating eggs

REARING THE YOUNG

The hatchlings are 28-30 mm long and weigh 4-7 g. They drink almost immediately from a shallow dish and eat dried dandelion leaves within a day. Keep them in a covered, ventilated tray with a weak heat source in the substrate, a basking lamp above and kitchen roll as substrate for the first weeks. Then they are moved to a smaller version of the adults' table. Diet and temperature are as for the adults.

Health and common mistakes

The species is sensitive to infection and quickly develops serious symptoms. The most frequent problems are caused by husbandry errors or infection:

- Respiratory infection and intestinal parasites after contact with other tortoises. Requires a vet, and the animal must be isolated.
- Pyramided shell with too much food, too much protein and too little calcium.
- Kidney damage with too much protein.
- Bone disease with too little UVB, D3 or calcium.
- Dehydration with too much heat without access to water and cooler places.

Quarantine of new animals is important. If the animal is lethargic, loses weight, has a discharge from the nose or does not eat for a couple of weeks, it must go to a vet with reptile experience.

Read more: Quarantine and hygiene

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.