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TORTOISES AND TURTLES

Speke's Hinge-back Tortoise

Kinixys spekii

Kinixys spekii is a medium-sized, elongated tortoise from the savannas and open woodland of eastern and southern Africa. The shell is flat and usually 13-18 cm long, and a movable hinge at the rear lets adults close their hind legs inside. The species is a true omnivore with fungi as its favourite food; it stresses easily, and newly imported animals often carry many intestinal parasites, so it is not a tortoise for beginners.

Family: Testudinidae Former name: *Cinixys spekii; Homopus darlingi; Kinixys australis; Kinixys jordani; Kinixys youngi*

KEY FACTS

THE ANIMAL

Adult size	**13-21 cm** total length incl. tail
Weight	**500-1,500 g**
Lifespan	**30-50 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Savanna, dry forest and rocky terrain**
Difficulty	**Experienced**

CARE

Min. enclosure	**160 × 80 × 40 cm** L × W × H for 1 adult
Temperature, day	**26-30 °C**
Basking spot	**32-35 °C**
Temperature, night	**20-24 °C**
Humidity	**50-70%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 2
Diet	**Insects, plants and worms/snails**
Kept	**Singly or in groups**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**84-108 months**
Clutch size	**2-6 eggs**
Incubation	**220-365 days** at 29 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Not Evaluated (NE)**

About the species

Kinixys spekii is an elongated tortoise with a distinctly flattened carapace. Adults are usually 13-18 cm long; the largest known male measured 18 cm and the largest female 21 cm. Females weigh up to 1.5 kg, males usually around 800 g. The flat shape allows the animal to wedge itself into crevices between rocks and under fallen logs. The keel along the back is weak and interrupted, and the rear marginal scutes are neither serrated nor flared outwards. As in all species of the genus, a movable hinge at the rear of the carapace allows the back section to close down over the hind legs and tail once these are drawn in. The hinge only develops in adults.

The shell has a pattern of concentric dark and light zones. Females keep the pattern, while older males often become uniformly olive-brown or yellowish brown. The male has a distinctly longer tail than the female, and the tail ends in a spine. The male's plastron is concave, while the female's is flat.

All measurements in the text are shell length. The species was described by John Edward Gray in 1863 and is named after the explorer John Hanning Speke, the first European to see Lake Victoria. For a long time it was treated as a subspecies of *Kinixys belliana* and appears under that name in older husbandry literature, so much of the older information covers several species at once. Today *K. spekii* is regarded as a species in its own right.

Distribution and habitat

Kinixys spekii occurs on the savannas of eastern, central and southern Africa: from Uganda, Rwanda, Burundi, Tanzania and southern Kenya south to Eswatini and KwaZulu-Natal in South Africa, and west to south-eastern DR Congo, northern Angola, the Caprivi Strip in north-eastern Namibia, Zambia, northern Botswana and Zimbabwe. The species is also found in Malawi and Mozambique.

The type locality is not known precisely but is probably north-western Tanzania.

> **Native range:** Angola, Botswana, Burundi, Congo - Kinshasa, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, Eswatini, Tanzania, Uganda, Zambia and Zimbabwe.

HABITAT

The species lives on the savanna: grassland, bushed and wooded grassland and open woodland such as miombo and mopane, often with rocks. The dry season is spent in woodland, which offers more cover, and in the rainy season the animals move out into the transition between woodland and grassland, where there is more food. Summers are hot with rain, and winters are mild and dry. At the edges of the range winter nights can drop to around freezing.

The flat shell suits life among rocks and in crevices, where the animal hides from heat and predators. Activity follows the rain: almost all animals are seen in the four wettest months, and for the rest of the year they are dormant. The species is a true omnivore, eating fungi, leaves, fruit and other plant parts as well as millipedes, snails and beetles.

Care

THE ENCLOSURE

Little specific information exists on the care of *Kinixys spekii*, because the species was long treated as part of *Kinixys belliana* and is kept far less often than several of its relatives. The care advice therefore rests on the habitat, on field studies of the species and on the genus as a whole; borrowed or estimated figures are noted under the individual sections.

Tortoises of the genus *Kinixys* stress easily and have particular requirements for temperature, light level and humidity. They are also difficult to handle and treat. The species is therefore not a tortoise for beginners, and newly imported animals need a parasite treatment plan from day one.

The enclosure must provide plenty of floor area: at least 8 times the shell length in length and 4 times in width, that is 160 × 80 cm for an animal of 20 cm, and at least 40 cm high. Less space is often used successfully, but this is the usual recommendation. The substrate is 10-15 cm of a moist mixture of peat, bark mulch and soil, where the animal can bury itself. Provide several hides at both ends, flat stones, plants and a humid hide with moss, and keep a large, shallow dish of clean water available. Do not offer a bare, open surface: the species likes to be able to retreat under something. In a cool climate the animal can only go outdoors in a secure, shaded run on the warmest summer days.

Read more: Humidity, misting and ventilation

TEMPERATURE

During the day the enclosure should be 26-30 °C, with a basking spot of 32-35 °C under a lamp at one end, measured on the substrate. The basking spot temperature is borrowed from related tortoises. The species basks very little: in the wild its body temperature is around 27 °C, and the animal seeks shade when it reaches 32 °C. The hides at the cool end should therefore stay at 23-26 °C, like the animal's burrows in the wild. At night, 20-24 °C is an estimate based on the climate of the habitat. Use a radiant heat panel or halogen lamps with a thermostat.

In the wild *K. spekii* is dormant for 7-8 months of the year, through the dry winter and the hot dry season, hidden in rock crevices, hollow logs, termite mounds or burrows under roots. The dormancy is caused by lack of food, not by cold. It should not be imitated in the enclosure: keep the animal active with steady warmth and food all year round.

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

HUMIDITY AND WATER

As a savanna species, *K. spekii* needs less humidity than the forest species of the genus, but it likes moisture and does not thrive in dry air. Humidity should be around 50-70 %, and the figure is an estimate based on the habitat and the genus. Keep the substrate damp, mist regularly, and give a lukewarm bath at least twice a week. Change the water in the dish daily, as algae form easily.

Young animals dry out faster than adults and need higher humidity. Swollen, closed eyes and lethargy are signs of dehydration and should lead to more humidity and a long soak in shallow, lukewarm water.

LIGHTING AND UVB

K. spekii is diurnal, and its activity depends on the heat: on hot days the animal is out in the morning and evening and hides in the middle of the day, while on cool days it is out around midday. Natural sunlight is best. Indoors the species needs UVB light with a UV index of 2.0-3.0 at the basking spot (Ferguson zone 2). The zone is an estimate and has not been measured for the species. The genus becomes stressed in bright light, so plants and hides where the animal can withdraw from the light are important. The light follows the seasons with about 12 hours a day. Glass and acrylic block UVB.

Read more: Lighting and UVB

FEEDING

K. spekii is a true omnivore. In the wild its diet by weight is just under half plants (leaves, grass, herbs, flowers, succulents and fruit), around 40 % fungi and around 12 % invertebrates, mostly millipedes and also snails and beetles. Fungi are the favourite food and provide the most energy, but they lack calcium and other nutrients, which the animal gets from the plants and invertebrates.

So offer a mixture of all three: herbs such as dandelion, plantain and clover and other leafy greens, button mushrooms and other edible mushrooms, a little soft fruit such as melon and tomato, and invertebrates such as snails, earthworms, millipedes and crickets. Red and orange fruit is readily taken and can get animals that refuse to eat started. Feed on a flat dish or stone. Dust the food with a calcium and vitamin supplement, and keep a cuttlebone available. Adults and young alike are fed daily.

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

BEHAVIOUR AND HANDLING

The species is shy and withdraws into its shell or digs in when disturbed. If picked up, it hisses, often empties its bowels and may snap at the air. The hinge and the narrow opening between carapace and plastron make the animal difficult to handle and examine. Lift it from below with two hands, and handle it as little as possible.

The animals can be kept singly or in a small group in a large enclosure with many hides. For the third and fourth tortoise, add at least 10 % to the floor area. Males fight by ramming each other until the weaker one is overturned or retreats, so keep only one male per enclosure. Do not mix the species with other tortoises, because parasites spread.

Breeding

SEXUAL MATURITY AND SEXING

The male has a longer tail than the female, and the tail ends in a spine. The male's plastron is concave, the female's flat. The sex can be seen once the plastron is about 10 cm long. In the wild, females become sexually mature at a shell length of around 16 cm or an age of 9 years, and males at around 14 cm or 7 years. Females are larger and heavier than males. Lifespan is not documented; the figure in the box is an estimate based on other medium-sized tortoises.

MATING

Males fight over the females at the start of the rainy season, and mating takes place during the rains. The male follows the female before mounting her, and during mating he makes continuous wheezing gasps. Give the female plenty of hides and a chance to get away from the male, and separate the animals if she is injured.

EGG-LAYING AND CLUTCHES

Egg laying takes place in the rainy season, in the southern hemisphere from November to April. A clutch contains 2-6 eggs, usually 2-3, and the female can lay more than one clutch a year. The eggs are large, around 41 × 31 mm and 20-28 g. The female digs the nest in the evening in the shade of bushes, about 10 cm deep. Give her a box of deep, loose, damp soil where she can dig.

INCUBATION

Incubation is long. At 29 °C the eggs hatch after around 220 days, and at the fluctuating temperatures of an outdoor nest it takes 313-365 days. In the wild the nest stays at 23-27 °C. Place the eggs in an incubator with damp vermiculite, and do not turn them.

Read more: Incubating eggs

REARING THE YOUNG

Hatchlings are 3-5 cm and have no hinge. In the wild they grow around 2 cm a year. In the genus the young eat almost nothing but invertebrates. They dry out quickly and need high humidity, a humid hide, warmth and UVB. Offer small snails, earthworms and insects daily along with a little mushroom and greenery.

Health and common mistakes

Newly imported animals are often in poor condition. The most common problems are emaciation and large numbers of intestinal parasites, both worms and single-celled organisms. Signs are loose droppings with mucus and sometimes blood, undigested food, loss of appetite, weight loss, dehydration and lethargy. Untreated, this can develop into intestinal inflammation and septicaemia.

- The first step is to restore fluid balance with long soaks in shallow, lukewarm water. Faecal samples are examined, and the vet treats according to the findings.
- Some of the parasites can infect other reptiles and humans, so hygiene and disinfection are essential. Monitor new animals closely for at least 12 months, checking weight, hydration and droppings.
- Dehydration: especially in young animals.
- Ticks and small roundworms: found in wild animals and come with new imports.
- Respiratory infection: runny nose and wheezing breathing in cold or overly dry air.

Contact a vet with reptile experience if the animal does not eat, loses weight or has loose droppings. A new animal must be quarantined before it is kept with other tortoises.

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.