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CHAMELEONS

Matschie's Two-horned Chameleon

Kinyongia matschiei

Kinyongia matschiei is the largest species in the genus *Kinyongia*, a chameleon with a pair of prominent nasal horns and a long prehensile tail from the forests of the East Usambara Mountains in Tanzania. It is shy, threatened in the wild and very rare in captivity, so little is known about its care.

Family: Chamaeleonidae Former name: *Chamaeleon matschiei; Chamaeleon fischeri matschiei*

KEY FACTS

THE ANIMAL

Adult size	**36-41 cm** total length incl. tail
Lifespan	**5-8 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Rainforest and montane forest**
Difficulty	**Expert**

CARE

Min. enclosure	**90 × 60 × 150 cm** L × W × H for 1 adult
Temperature, day	**20-25 °C**
Basking spot	**26-28 °C**
Temperature, night	**12-16 °C**
Humidity	**50-100%**
Water	**No water dish**
UVB	**Essential** Ferguson zone 2
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**12-20 eggs**
Incubation	**390-400 days** at 20-22 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Endangered (EN)**

About the species

Kinyongia matschiei is a large, powerfully built chameleon and the largest species in the genus *Kinyongia*. Males reach up to 41 cm including the tail, females up to 36 cm. The species has a pair of long, flat nasal horns that sit parallel or slightly splayed. They are longest in the male, where they can reach about 20 mm, and much shorter in the female. The tail is long and can grip branches. The base colour is green, and the colour changes with mood, light and temperature.

The species was described by Franz Werner in 1895 from animals from Derema in the East Usambara Mountains and is named after the zoologist Paul Matschie. For many years it was regarded as a subspecies of *Kinyongia fischeri*, but it is a species in its own right, living only in the East Usambaras. *Kinyongia vosseleri* lives in the same forests and resembles it so closely that the two are hard to tell apart. The decisive difference is that the female of *K. matschiei* has nasal horns, whereas the female of *K. vosseleri* lacks them.

The species is fast, curious and active, but also shy. It likes to hide in dense vegetation. *K. matschiei* has never been widespread in captivity. Tanzania no longer exports wild chameleons, and the species is almost absent from European breeding groups. It is a species for very experienced chameleon keepers. For a chameleon it is long-lived: animals that arrive as adults can live for at least five years in captivity.

Distribution and habitat

Kinyongia matschiei is found only in the East Usambara Mountains in north-eastern Tanzania. The type locality is Derema, and the species lives up to about 1,500 m above sea level. The range covers about 800 km² of isolated forest patches, but the area where the species actually occurs is under 300 km².

The population is declining because the forest is being cleared. *K. matschiei* can be seen in disturbed forest at the forest edge, but not in completely converted areas such as plantations. In the West Usambaras lives the closely related *Kinyongia multituberculata*, and in the East Usambaras *Kinyongia vosseleri*, *Kinyongia tenuis* and *Trioceros deremensis* share habitat with the species.

> **Native range:** Tanzania.

HABITAT

The species lives in humid forest in the East Usambaras, from lower slopes up to about 1,500 m. It is tied to trees and bushes and moves in the dense understorey and in the lowest layer of the tree canopy, where it sleeps on thin branches at night. The forest is humid and often misty, with mild air by day and cooler nights.

Precise climate data for the species are not documented. The forest type is the same as for other chameleons in East African montane forests: high humidity, regular rain or mist and a clear difference between day and night. This is the climate an enclosure should imitate.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Little is known about the care of *Kinyongia matschiei*. The climate in the East Usambaras is humid and mild with cool nights, and the species has the same requirements as other montane chameleons. The figures for temperature, light and food are borrowed from *Trioceros jacksonii*. *Kinyongia fischeri* and *Kinyongia multituberculata* are close relatives with the same needs, and *Kinyongia tenuis* and *Trioceros deremensis* live in the same forests.

An adult needs a tall, well-ventilated enclosure of at least 90 × 60 × 150 cm (length × width × height). The species is the largest in the genus, moves a great deal and is fast, so bigger is better. A mesh enclosure provides the fresh air that chameleons need and tolerates the daily misting better than glass, while an enclosure with a glass front and mesh lid holds humidity better in dry rooms. Whatever the type, the air must be able to change, otherwise stagnant air and bacteria build up and cause respiratory infections.

The furnishings should be dense and green. The species is shy and needs a great deal of cover, otherwise it becomes stressed. Fill the enclosure with live plants, for example ficus and schefflera, and with sloping branches of different thicknesses, so that the animal can climb and hide. Keep at least two thirds of the volume planted. Opaque panels on the sides are a good idea so that the animal cannot see out, and make a small peephole for checking. Cover the floor with a light drainage layer so that the water can run off, for example clay pebbles beneath soil and bark, and a drip tray collects spillage. No sand or small stones that the animal might swallow.

Keep only one animal in each enclosure. The species is solitary and is stressed by sight of its own kind, so two animals must be in separate enclosures with no view of each other.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

By day the enclosure should hold 20-25 °C. Over a branched basking spot in the upper part of the enclosure the surface may reach 26-28 °C for a few hours in the morning and afternoon. The species lives in montane forest and does not tolerate high heat, so the temperature must never exceed 28 °C. At night it should fall to 12-16 °C, and this difference between day and night is important for the animal's wellbeing. Switch the heat off at night.

Use a heat lamp with a ceramic socket outside the enclosure, so that the animal cannot touch the bulb. Measure with a digital thermometer both high and low and with an infrared thermometer at the basking spot. If the animal heads for the bottom and gapes, it is too hot. If it sits hunched and dark and sleeps by day, it is too cold.

Read more: Heat and temperature

HUMIDITY AND WATER

Air humidity should fluctuate. At night it should be close to 100 %, and by day it may fall to about 50 %, so that the enclosure dries off. Constantly high humidity causes mould and respiratory infections. Keep the enclosure damp with misting every morning and evening, each lasting at least a minute, and supplement with a fogger at night if you like. Switch the fogger off while the heat lamp is on, otherwise the air can become too warm. Use distilled or reverse-osmosis water in the fogger and clean it every week.

The species does not drink from bowls, but from water droplets on leaves. A drip or rain system that gives droplets on the leaves for several minutes at a time is the surest way of providing water. Water in the form of droplets is essential for fluid balance, and dehydration is one of the most frequent causes of illness in chameleons. Signs are sunken eyes, dry skin and tough, yellow urates.

LIGHTING AND UVB

The species is diurnal and needs strong light for 11-12 hours a day. Put one or two T5 HO tubes of 6,500 K or a powerful LED plant lamp over the enclosure. This gives light for the plants and clear colours in the animal.

UVB is necessary for diurnal chameleons, because it provides vitamin D3 and prevents bone disease. The species lives in forest and belongs at around Ferguson zone 2: a T5 HO tube of 6-7 % over the basking spot in a reflective fitting. The aim is a UV index of 2-3 at the animal's back at the basking spot and lower further down. Only mesh should separate tube and animal, because UVB does not pass through glass or plastic. The distance depends on the tube and mesh and should be checked with a UV meter. Replace the UVB tube every year, even if it still lights up.

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

FEEDING

Kinyongia matschiei eats insects. The species takes anything that fits in its mouth and is particularly fond of silkworms. Offer a varied diet of crickets, grasshoppers, dubia cockroaches, silkworms, wasp larvae, black soldier fly larvae, hornworms and other soft insects. Mealworms, superworms and waxworms are given only as an occasional treat. The insects must be no larger than the distance between the animal's eyes.

Feed newly hatched and young animals twice a day in as large quantities as they will eat. Adults get 6-8 insects every other day, adjusted according to weight. If the animal tends towards obesity, cut down. Weigh the animal every month.

Dust the insects with calcium without D3 at most feedings and with a multivitamin containing retinol (not beta-carotene) now and then. Give the insects nutritious food for at least a day before feeding (gut-loading). Use reared insects and never wild-caught ones. Chameleons do not drink from bowls, so water is given as droplets (see Humidity).

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

BEHAVIOUR AND HANDLING

Kinyongia matschiei is shy and easily stressed. When the species is frightened, the colour becomes dark and striped, and the animal hides in the foliage or creeps down a branch. Keep the surroundings still and calm, and place the enclosure so that the animal cannot look out into the room all day.

Handling is not necessary and should be limited to essential care and vet visits. Chameleons do not benefit from being stroked. When the animal has to be moved, let it walk onto your hand instead of grabbing it. Give it peace and calm movements.

The species moves a great deal and is fast. It therefore needs room to climb around, and an animal that keeps running along the mesh suggests stress or an enclosure that is too small. Keep one animal per enclosure.

New animals should have their faeces examined for parasites and be treated as needed. Once the parasites are gone, the species is a hardy chameleon.

Breeding

SEXUAL MATURITY AND SEXING

The male is larger than the female and has longer nasal horns: in the male they can reach about 20 mm, and in the female they are much shorter. The sex is therefore clearly visible from the horns, but also from the tail base, which is broader in the male. Age and size at sexual maturity are not documented for the species.

MATING

Mating and preparation are not documented for the species. In closely related montane chameleons the male and female are kept in separate enclosures and brought together only briefly, when the female is receptive. The female shows that she does not want to mate by turning dark and opening her mouth. The male must be removed if she shows clear signs of stress.

EGG-LAYING AND CLUTCHES

The species lays eggs. Gestation lasts about two months. Clutch size is not documented for the species; the figure in the fact box, 12-20 eggs, is borrowed from *Kinyongia fischeri*. A gravid female needs a bucket or a box with 30-40 cm of damp, loose soil where she can dig a tunnel and lay the eggs. Without a suitable place she may retain the eggs, and this can cause life-threatening egg-laying difficulties. A gravid female needs extra calcium and plenty of water.

INCUBATION

The eggs lie in a closed container with damp vermiculite or perlite. They must be damp, but not wet, and must not be turned. Incubation is unusually long: about 13 months at room temperature, about 20-22 °C, without extra heat. A more precise incubation temperature is not documented. At a stable room temperature almost all eggs hatch.

Read more: Incubating eggs

REARING THE YOUNG

The young hatch with a very long tail. Rearing is not documented for the species. In closely related species the young are given a small mesh enclosure with dense planting, daily food of fruit flies (*Drosophila hydei*) and small crickets sized to the young animals' heads, calcium and drip water. Each juvenile must sit alone in its own enclosure from the first day.

Health and common mistakes

Most illnesses are caused by the wrong environment: too little water, too little UVB, too much heat or too one-sided a diet. The typical problems are:

- Dehydration from too little drip or misting water. Signs are sunken eyes and tough, yellow urates.
- Metabolic bone disease from too little UVB and calcium.
- Parasites, especially in newly acquired animals. Have a faecal sample examined by a vet and treat as needed.
- Respiratory infection from stagnant air, constant humidity or nights that are too cold. Signs are an open mouth, bubbling breathing and mucus.
- Egg-laying difficulties in females, which require a vet.

A healthy animal has open, clear eyes and smooth skin, changes colour naturally and eats regularly. Weigh the animal every month. A weight loss of 10 % or more suggests illness. Chameleons hide illness, so take the animal to a vet with experience in reptiles if it keeps its eyes closed, does not eat, loses weight or sits dark and hunched. The species is threatened in the wild, and wild-caught animals are weakened by transport, so always choose reared animals.

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.