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CHAMELEONS

West Usambara Two-horned Chameleon

Kinyongia multituberculata

Kinyongia multituberculata is a medium-sized, green montane chameleon from the Usambara Mountains in north-eastern Tanzania. The male has a broad, flattened rostral appendage and distinct tubercles at the front of the dorsal crest. The species lays eggs and requires a cool, humid climate and a large, densely planted enclosure. Little is known about its care, and the species is best suited to the experienced keeper.

Family: Chamaeleonidae Former name: *Bradypodion fischeri multituberculatum; Kinyongia fischeri multituberculata; Chamaeleon fischeri multituberculatus*

KEY FACTS

THE ANIMAL

Adult size	**8-14 cm** snout-vent length
Lifespan	**5-7 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Rainforest and montane forest**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 60 × 120 cm** L × W × H for 1 adult
Temperature, day	**20-25 °C**
Basking spot	**27-29 °C**
Temperature, night	**12-16 °C**
Humidity	**70-100%**
Water	**No water dish**
UVB	**Recommended** Ferguson zone 2
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**9-12 months**
Clutch size	**12-20 eggs**
Incubation	**240-330 days** at 17-23 °C

PROTECTION AND PAPERWORK

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

About the species

Kinyongia multituberculata is a medium-sized chameleon in the genus *Kinyongia*. The male has a flattened rostral appendage that is widest at the base and has a rounded tip and a serrated upper edge. Along the front half of the dorsal crest sit distinct, knob-like scales that become smaller towards the rear. These are what the species name refers to: it comes from Latin multi, many, and tuberculum, small knob. The female has small, rounded horn rudiments and distinct scales on the back that reach to the middle of the body.

The males are coloured in white, yellow, pale green to olive green, grey, brown and black. The females are mostly green with yellow patterns.

The largest animals measure 14 cm from snout to vent, and the females about 8 cm. Total length including the tail is not documented for the species.

The species was formerly regarded as a subspecies of *Kinyongia fischeri*. Much of the husbandry knowledge that exists dates from that time and applies to the whole group.

Distribution and habitat

Kinyongia multituberculata lives in the Usambara Mountains in north-eastern Tanzania, in both West and East Usambara, up to about 2,300 m altitude. The type locality is Magamba near Lushoto in West Usambara.

The species is assessed as endangered (EN), and the population is declining.

> **Native range:** Tanzania.

HABITAT

The species lives in humid montane forest. For the whole *Kinyongia fischeri* group, the animals mostly sit in shrubs and small trees at the forest edge, and the temperature varies only slightly through the year. The nights in the mountains are cool, and the animals do not tolerate sustained high temperatures.

In East Usambara, the related *Kinyongia matschiei* and *Kinyongia vosseleri* live under the same conditions, at about 1,500 m altitude.

Care

THE ENCLOSURE

Little is known about the husbandry of *Kinyongia multituberculata*. The climate in the range is cool and humid with cool nights, and the care is therefore based on the related, better-known montane species *Kinyongia fischeri*, *Kinyongia matschiei* and *Kinyongia xenorhina*. The figures here are borrowed from them or estimated from the climate.

An adult needs an enclosure of at least 60 × 60 × 120 cm (length × width × height), like other montane chameleons of the same size. The related species move a great deal and are fast and curious, so larger is better. The species is kept singly, and males must not be able to see each other.

Furnish the enclosure very densely with plants, twigs and branches at several heights so that the animal can retreat into the foliage. The animals are shy, so opaque sides and back are an advantage. An enclosure of glass and mesh provides ventilation while retaining humidity, and a drain in the bottom removes excess water. A substrate layer is not necessary, but a female needs a laying site (see Breeding).

Read more: Humidity, misting and ventilation

TEMPERATURE

During the day the temperature should be 20-25 °C with a basking spot of 27-29 °C, and at night it should drop to 12-16 °C. The basking spot should be moderate, and heat above 30 °C must be avoided, so in hot summers the enclosure should stand in a cool place.

Keep the air moving so it does not become stagnant. Measure the surface temperature of the basking branch with an infrared thermometer.

Read more: Heat and temperature

HUMIDITY AND WATER

The humidity should be high, 70-100 %, and highest at night and in the morning. The animal drinks droplets and should not be given a water bowl. Use a fogger for a couple of hours before the light comes on in the morning, and mist briefly in the morning and again in the afternoon. Branches and leaves must dry during the day so that mould and foot sores do not develop. Distilled water or reverse-osmosis water keeps foggers and nozzles clean.

LIGHTING AND UVB

The species is active by day and needs a bright, but not too warm, enclosure. UVB is recommended, and Ferguson zone 2 is an estimate for a montane chameleon. Position the tube so that the animal can choose between light and shade, and have the light on 10-12 hours a day. Unfiltered sunlight outdoors is an advantage in summer, as long as the animal has shade and does not get too hot.

Read more: Lighting and UVB

FEEDING

Kinyongia multituberculata eats insects such as crickets, cockroaches, silkworms, hornworms and grasshoppers. The related montane species take anything that fits in the mouth, including small lizards. The feeder insects must be captive-bred and well fed on nutritious food.

Adults get a couple of insects every second day, and juveniles are fed daily. The related montane species are sensitive to supplements: dust the food with calcium about once a week, and give D3 only in winter, when the animal gets no sunlight. Wild-caught animals should be examined and treated for parasites.

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

BEHAVIOUR AND HANDLING

Kinyongia multituberculata is shy and is stressed by handling. Do not pick the animal up without reason, and let a new animal have a few weeks in peace before it is handled.

The species is kept singly, and the males are territorial. If the animal stops eating, it must be taken to a vet with reptile experience.

Breeding

SEXUAL MATURITY AND SEXING

The males are recognised by the broad rostral appendage and the distinct tubercles on the back. The females have small, rounded horn rudiments. In the *Kinyongia fischeri* group, the animals are sexually mature after 9-12 months, but the females should not breed until they are 14-16 months old.

MATING

The female is put in with the male. If she is receptive, she tolerates the male's advances without aggression. If she rejects him, the animals must be separated immediately. Without seasonal change in temperature, the group breeds all year round.

EGG-LAYING AND CLUTCHES

The female is gravid for about eight weeks. A few days before laying she starts to wander around and eats less, and then she digs a burrow and lays the eggs at the end of it. The clutch is 12-20 eggs, on average about 15-16. Give the female a layer of slightly moist soil and sand of at least 20 cm at about 18-20 °C, and feed her daily and in a balanced way during gravidity to avoid egg-laying problems.

INCUBATION

The eggs are moved to a closed container with vermiculite, which must not be too wet (water and vermiculite 1:1 by weight). They are placed two thirds down in the substrate and must not be turned. Incubate at 22-23 °C by day and 17-18 °C at night for the first six months, and then 1-2 °C warmer. The eggs then hatch after 8-11 months. The figures apply to the *Kinyongia fischeri* group.

REARING THE YOUNG

The hatchlings can be reared in small groups for the first 2-3 months, but must then live separately. The temperature should be slightly lower than for the adults, and the humidity high. Give small insects with calcium and vitamins.

Health and common mistakes

Little documented knowledge exists about diseases in *Kinyongia multituberculata* specifically. Typical problems in montane chameleons are:

- Overheating and burns with lamps that are too hot and temperatures that are too high.
- Dehydration with humidity that is too low and too few drinking opportunities.
- Intestinal parasites, especially in wild-caught animals. After treatment, the animals often show better colours and thrive.
- Respiratory infections with stagnant air.
- Bone loss with too little UVB and calcium.

- Overdosing of vitamins A and D.
- Sores and mould from branches that are wet all day.

Contact a vet with reptile experience if the animal stops eating, becomes dark and lethargic or breathes with its mouth open. Lifespan is not documented for the species; in the *Kinyongia fischeri* group the animals live no more than about 6-7 years in captivity.

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.