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CHAMELEONS

Common Chameleon

Chamaeleo chamaeleon

Chamaeleo chamaeleon is a medium-sized, tree-dwelling chameleon from the Mediterranean coast and the Middle East. It is the only chameleon that lives naturally in Europe. It is green to olive-brown with two pale longitudinal bands along the sides. The species is short-lived, and little is known about keeping it in captivity. It needs a tall mesh enclosure with UVB and low night temperatures and must live alone.

Family: Chamaeleonidae Former name: *Chamaeleo parisiensium; Chamaeleo saharicus*

KEY FACTS

THE ANIMAL

Adult size	**20-30 cm** total length incl. tail
Weight	**17-56 g**
Lifespan	**1-4 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Semi-desert and savanna**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 45 × 90 cm** L × W × H for 1 adult
Temperature, day	**25-30 °C**
Basking spot	**32-35 °C**
Temperature, night	**15-20 °C**
Humidity	**40-60%**
Water	**No water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**12 months**
Clutch size	**14-50 eggs**
Clutches per year	**1**
Incubation	**240-360 days** at 26 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex A**
IUCN	**Least Concern (LC)**

About the species

Chamaeleo chamaeleon reaches 20-30 cm including the tail, most often about 25 cm, of which the tail makes up 10-12 cm. The female is often distinctly larger than the male: adult females weigh 21-56 g, males 17-37 g. The body is high-backed and laterally compressed, the head has a tall, helmet-like casque at the back, and a low crest runs along the back. There are no horns or skin flaps. The snout is rounded at the tip. The male often has a small tarsal spur on the hind leg, which is weaker or absent in the female.

The base colour is pale to olive green or yellowish-brown, always with two irregular, pale longitudinal bands along the side. The colour can change quickly to grey, blackish or dark brown with dark spots. The change depends on light, temperature and mood and not on the background. Females show with colours and patterns whether they are receptive, and an animal that is caught or stressed often turns dark. At night the animals are pale brownish-grey.

The species is divided into four subspecies: *C. c. chamaeleon*, *C. c. musae*, *C. c. orientalis* and *C. c. recticrista*. Synonyms such as *Chamaeleo vulgaris* and *Chamaeleo parisiensium* are found in older literature. The species should not be confused with *Chamaeleo africanus*, which is larger; the chameleons on the southern Peloponnese belong to that species.

The species is short-lived. In the wild most mature after a year, breed once and die, and in *C. c. musae* only about 0.2% survive to a new breeding season. The greatest known age in captivity is about 3.5 years.

Distribution and habitat

Chamaeleo chamaeleon lives along the southern and eastern shores of the Mediterranean and around the Red Sea. In North Africa it is found from Morocco and Western Sahara through Algeria, Tunisia and Libya to Egypt and Sinai, and to the east in Israel, Palestine, Jordan, Lebanon, Syria, Iraq, southern and south-eastern Turkey, on Cyprus and from south-western Saudi Arabia to Yemen.

In Europe there are only a few, separate populations: in southern Portugal (the Algarve), in southern Spain (Huelva, Cádiz, Málaga, Granada and Almería) and on the Greek islands of Samos and Chios; on Crete the species has not been seen for many years. Whether the Iberian populations are native or were introduced by humans long ago is unresolved. The populations on Malta, Madeira and in Apulia and Calabria in southern Italy are introduced.

> **Native range:** Morocco, Western Sahara, Algeria, Tunisia, Libya, Egypt, Israel, Palestinian Territories, Jordan, Lebanon, Syria, Iraq, Turkey, Cyprus, Saudi Arabia, Yemen, Spain, Portugal and Greece.

HABITAT

The species lives in vegetation-rich coastal areas such as vegetated dunes, open woodland, bushland and scrub, often near water. In North Africa it is also found in open, dry country with sparse vegetation, where it moves on the ground. It lives from sea level up to about 800-900 m over most of the range and up to about 2,600 m outside Europe. In southern Europe it also lives in olive groves, eucalyptus plantations and gardens that are watered regularly.

The species is diurnal and sits very still in the branches of trees and shrubs such as carob, mastic and oak scrub. The animals move during the day to regulate temperature: by day they sit high up in the breeze to keep cool, and at night they sleep in denser foliage. Young often sleep on the ground in tall grass. Each animal has its own territory of 40-720 m² and typically sleeps in the same tree every night.

The climate is Mediterranean with hot, dry summers and cool, rainy winters. The difference between day and night temperature can reach 40 °C. The diet is flying and crawling insects such as flies, bees and wasps, ticks, grasshoppers, crickets and beetles, which the animal lies in wait for and shoots its tongue out at.

Read more: Feeder animals: keeping and breeding

Care

THE ENCLOSURE

Little is known about the care of *Chamaeleo chamaeleon*, and it is rarely kept. The care is based on the climate of the range and on closely related *Chamaeleo* species such as *Chamaeleo senegalensis* and *Chamaeleo calyptratus*, which are better known in captivity.

An adult needs a mesh enclosure of at least 60 × 45 × 90 cm (length × width × height). Bigger is always an advantage. Only one chameleon should live in each enclosure, because the animals are territorial and become stressed even at the sight of a conspecific. Mesh on the top and sides provides the fresh air that chameleons need.

Furnish the enclosure with many branches of different thicknesses and in different directions, so the animal can climb and choose its position. Plants such as ficus and hibiscus provide cover and hide part of the mesh. Also create a lower section with thinner branches and grass-like plants, because the species also moves close to the ground. The floor should be flat and without loose substrate, for example newspaper or a tray: loose material gets eaten when the animal misses its target. All lamps hang outside the mesh, and the branches should sit far enough from the lamps that the animal cannot burn itself.

TEMPERATURE

The species comes from a climate with warm days and cool nights. During the day the temperature in the enclosure should be 25-30 °C, and on a basking branch it should be 32-35 °C. Measure the basking branch with an infrared thermometer. A lamp that is too strong can cause serious burns, even through the mesh.

At night the temperature should fall to 15-20 °C. In an ordinary living room night heating is not necessary, and a bulb should be switched off at night. The animal must always be able to choose between warm and cool.

Winter in the wild is cool and rainy, and activity is lower. Whether adult animals benefit from a cool rest period in captivity has not been documented, so a proper winter rest is not recommended.

HUMIDITY AND WATER

Humidity should be 40-60 %, and the enclosure should dry out completely between waterings, because the species comes from a dry summer climate. Mist the enclosure twice a day, so that branches and leaves are covered in droplets, and let the surfaces dry in between. The animal does not drink from a bowl, but licks droplets off leaves. A drip on top of the mesh that runs down over the leaves is a good supplement.

With too little moisture the animal becomes lethargic and dehydrated and has problems with shedding. If the air is instead constantly humid and still, this causes respiratory infections and mould. A good mesh enclosure with good airflow and a dry period at night solves both.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal and needs strong light for 12 hours and darkness for 12 hours. UVB is necessary, because the animal makes D3 in its skin and needs it to absorb calcium. Place a T5 UVB tube or an LED bar on top of the mesh, so the basking branch gets a UV index of about 3-4. This corresponds to Ferguson zone 3.

The uppermost branch should sit at least 30 cm below the lamps. Check the UV index with a UV meter, and replace UVB tubes at least twice a year, because they lose UVB long before they stop lighting. Also give the animal a heat bulb, so it can bask in the morning.

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

FEEDING

The species is insectivorous and needs live insects: crickets, grasshoppers, silkworms, hornworms and roaches such as *Blaptica dubia*. In the wild the diet consists of flying and crawling insects, so variety is important. Wax moth larvae and mealworms are fatty and are only given occasionally. The insects must not be larger than the width of the animal's head and should have been fed well on greens and calcium a couple of hours before they are offered.

Young are fed every day with as many small insects as they will eat. Adults get 5-7 medium-sized insects every other day. Remove insects that have not been eaten, because they can bite the animal. Feed in the morning, so the animal can warm up and digest.

Dust the insects lightly with calcium without D3 at most feedings, and with calcium with D3 and a multivitamin a couple of times a month. Calcium deficiency causes bone disease.

BEHAVIOUR AND HANDLING

Chamaeleo chamaeleon is an animal to look at and not to handle. The species sits still and lies in wait for prey. Handling stresses it, and stress shows as dark colour, an open mouth and an inflated body. The animal is territorial and must live alone, even when the enclosure is large. Give a new animal peace for the first few weeks and place the enclosure so that people are not constantly walking past.

Males fight over females in the breeding season and eat young they meet, so adults should therefore not live together. The animal must never be held tight or picked up by the tail.

Breeding

SEXUAL MATURITY AND SEXING

The male often has a tarsal spur on the hind leg and is smaller than the female, which can become distinctly larger. The species becomes sexually mature after about a year. Females produce eggs even if they have not met a male, and therefore need a laying bin once they are adult.

MATING

In the wild the animals mate from mid July to mid September. The animals then move down into the low vegetation or onto the ground to find a mate. The male follows the female closely and guards her for several days until she has laid eggs, and larger females are preferred and guarded longest. The female shows with her colours whether she is receptive: green with two yellow lines means she is ready. If she has mated, she rejects the male with yellow, orange or blue spots, an open mouth and hissing, and then he must be removed. Only put the animals together under supervision. Breeding in captivity is rare and not described in detail.

EGG-LAYING AND CLUTCHES

The female lays one clutch a year of 14-50 eggs in a burrow dug in the ground, about one to two months after mating, typically in October or November. The burrow is on average just over 50 cm long, and larger females lay more eggs. A female needs a laying bin of at least 40 × 40 × 40 cm with at least 30 cm of damp play sand or sand mixed with soil. Place a branch in the bin, so she can climb in and out. She digs a tunnel, lays the eggs and closes the tunnel. She must have complete peace. If she cannot pass the eggs, it is life-threatening, and she must go to a vet immediately.

INCUBATION

The eggs are laid half-buried in damp vermiculite in a tightly closed container, in the same orientation as they were laid. They must not be turned.

The embryo goes dormant (diapause) just after laying. In the wild the dormancy lasts the whole winter, development continues in April, and the young hatch in August after about 10.5 months. At a constant 26 °C the eggs also hatch, but the dormancy lasts 2-4 months, and hatching is spread over two months. Four months at 16 °C, followed by 26 °C, imitates the winter and makes a clutch hatch within 2-14 days. Allow 8-12 months from laying to hatching.

Read more: Brumation and the seasons

REARING THE YOUNG

Rearing of the species is not described in detail. The young need a mesh enclosure of at least 40 × 40 × 75 cm with many thin branches and plants, UVB and the same temperatures as the adults. In the wild young often sleep on the ground in grass, so give them low plants and thin branches at the bottom. Mist twice a day. Young must live separately, because they are territorial from an early age and can eat each other.

Health and common mistakes

Most problems are caused by the care. The typical problems are:

- Dehydration. Signs are sunken eyes, wrinkled skin, dry droppings and orange or yellow urates.
- Bone loss (metabolic bone disease) from too little UVB or calcium.
- Respiratory infection in humid, still air: mucus in the mouth, an open mouth and lethargy.
- Egg binding in females, which is life-threatening and requires a vet.
- Burns from lamps.
- Internal parasites, especially in wild-caught animals. Have a new animal checked with a faecal sample.

A healthy animal has open, clear eyes and plump skin, holds firmly to the branch and eats. Go to a vet with experience in reptiles if the animal does not eat, loses weight, has its eyes closed during the day, has mucus around the mouth or sits dark and lethargic.

Read more: Common diseases and signs of illness Read more: Buying animals: captive-bred, wild-caught and transport

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.