

INTERNATIONAL CHAMELEON DAY

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Facts about Chameleons

May 9, 2024

INTERNATIONAL CHAMELEON DAY

Here's to celebrating chameleons! Wildlife Madagascar and our many partner organizations are establishing May 9 as a dedicated day each year to appreciate and raise awareness about chameleons and their habitats. In honor of these amazing lizards, we have developed materials that you can use and share for your own chameleon celebration, including fact sheets, activities, and puzzles.

Help spread the word on social media, too, and use the hastags:
[#chameleonday](#) [#showyourcolors](#) [#internationalchameleonday](#)

International Chameleon Day Acknowledgments

With Gratitude

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Fast Facts

TAXONOMY

Family: Chamaeleonidae
Subfamilies: Brookesiinae, Chamaeleoninae
11 Genera, 228 Species:

- *Chamaeleo* 14 species
- *Calumma* 42 species
- *Rhampholeon* 25 species
- *Nadzikambia* 2 species
- *Furcifer* 24 species
- *Trioceros* 41 species
- *Kinyongia* 23 species
- *Brookesia* 31 species
- *Bradypodion* 20 species
- *Rieppeleon* 3 species
- *Palleon* 2 species

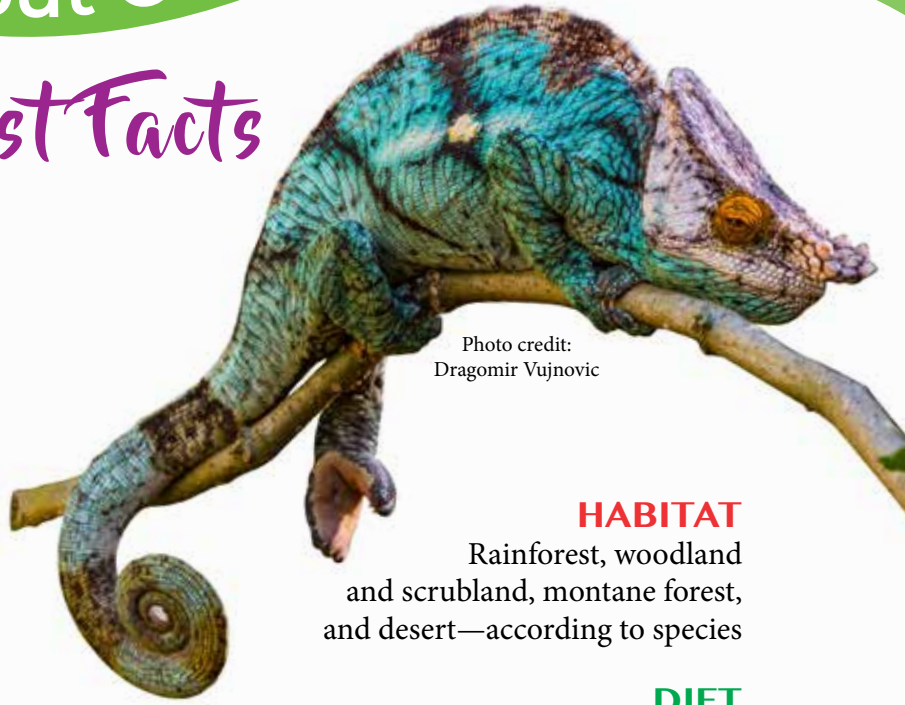


Photo credit:
Dragomir Vujnovic

HABITAT

Rainforest, woodland and scrubland, montane forest, and desert—according to species

DIET

Mainly insects, rarely small reptiles, amphibians, or birds

STATUS

Some Endangered or Critically Endangered

SIZE

Largest:
Parson's chameleon,
up to 27 inches
(68 cm) long

Smallest:
Nano chameleon,
only about
½ inch long



Photo credit: Frank Glaw



LIFESTYLE

Diurnal
Solitary

REPRODUCTION

Gestation:

For live young, 4 to 6 months, depending upon species

Incubation:

For egg-laying species,
4 to 24 months

Number of young:

Small chameleons lay 2 to 4 eggs, large species lay 80 to 100 eggs. Those that give birth to live young produce from 8 to 30 young.

THREATS

Habitat Loss
Climate Change



Fun Facts








-  A chameleon's tongue is launched out of its mouth like a catapult, so fast that it's a blur. The tongue can go from 0 to 60 miles per hour in a hundredth of a second, and at 264 times the force of gravity.
-  The name chameleon means earth lion and comes from the Greek words "*chamai*" (on the ground, on the earth) and "*leon*" (lion).
-  Chameleons shed their skin in pieces. How often they shed depends on how quickly they grow.
-  Most chameleon species have a prehensile tail that can wrap around and hold on to tree branches while climbing. The chameleon's tail cannot be broken off and regrown like those of some other lizards.
-  Chameleons don't really change color to match what they are sitting on, and they cannot change to just any color or pattern. Instead, each chameleon species has certain patterns and colors that it can decide to show on its skin.
-  **Namaqua** chameleons live in Africa's **Namib** Desert, where they dig holes in sand dunes to escape the extreme heat and cold.
-  Jackson's chameleon is one of the species that gives live birth instead of laying eggs.



Photo credit: Dragomir Vujnovic



Characteristics



Photo credit: Frank Glaw

COLOR

Depending on the species, chameleons come in a rainbow of colors, including green, blue, and turquoise, bright yellow, pink, and orange, and even startling red. There is also wide variation of patterns, spots, stripes, and bands in striking color combinations. Males are typically more brightly colored than females.

Chameleons don't really change color to match their surroundings; they don't look at what they're sitting on and deliberately decide to match it. They also can't change to just any color or pattern. Each chameleon species has a group of patterns and colors that it is able to display.

How chameleons change color is a fascinating process. Chameleons have four layers of skin: the outer, protective layer, called the epidermis; the chromatophore layer, which contains yellow and red pigments; the **melanophore** layer, which has the dark pigment melanin and can create brown and black colors or reflect blue; and the nether layer, which only reflects white. Nerve impulses and hormone changes cause the color cells in these layers to expand and shrink, and the blending of the different layers creates the colors and patterns that we see.

EYES

Chameleons have a unique way of looking at the world. Each eye has a scaly lid shaped like a cone, with only a small, round opening in the middle for the pupil. The eyes are located on either side of their head, and each eye can rotate and focus independently, so they can look at different things simultaneously. When one eye detects a prey item, a threat, or another chameleon, the chameleon can turn its head in that direction to allow both eyes to focus on it. They then have sharp, stereoscopic vision to carefully view the subject of interest.

FEET

For a chameleon, putting its best foot forward means getting a grip—with specialized toes. Chameleons are zygodactyls, meaning that on each foot, the five toes are arranged in a group of two digits and a group of three digits. On the front feet, the bundle of three toes is on the inside of the foot, and the bundle of two toes is on the outside. On the back feet, the pattern is reversed. This foot structure gives the lizard a secure and strong grasp as it clutches a branch, which allows it to maneuver horizontally or vertically. And they have sharp claws on each toe, which help them climb and grip surfaces that they cannot grasp tightly, such as tree trunks.

TONGUE

A chameleon's tongue is a wonder of nature, a lightning-fast projectile that hurtles out of the mouth to zap prey. It was once thought that the stickiness of the muscular tongue pad was what sealed the deal. But scientists have now found that the speed and form of the tongue creates an effect like a suction cup on the tip, in addition to the adhesion. Hard to escape that!

The tongue is launched by the hyoid bone—a piece of cartilage that extends into the mouth from the throat—with the help of ringed muscles in the tongue. This highly complex structure is composed of cartilage, muscles, nerves, glands, and tissues that all work together kind of like a catapult to nab an unsuspecting insect.

Once the prey sticks to the tongue, the chameleon draws it back into the mouth, where its strong jaws crush it for swallowing. The tongue is then kept bunched up at the back of the mouth until it is needed again.

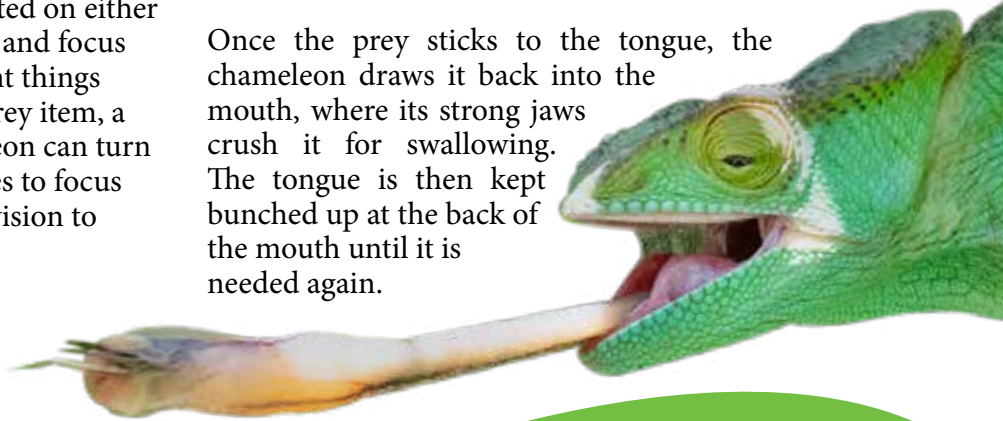


Photo credit: Ken & Mary Campbell





Photo credit: Dragomir Vujnovic

HABITAT

Chameleons are found in Africa, Asia, and Europe, but most live in Madagascar and other parts of Africa. The rest are found in the Middle East, a few on islands in the Indian Ocean, and one, the Indian chameleon, in India, Pakistan, and Sri Lanka.



Photo Credit: Tojo Lytah Razafimaheta

Chameleons live in a variety of habitats, from rainforests and lowlands to deserts, semi-deserts, scrub savannas, and even mountains. Many inhabit trees, but some live in grass or on small bushes, fallen leaves, or dry branches.

DIET

Chameleons feed mostly on invertebrates, including grasshoppers, locusts, beetles, moths, and flies, although larger adults will also eat small reptiles, amphibians, or birds. Chameleons are considered opportunistic hunters: they watch and wait for prey to pass by within range of their long tongue.



Photo credit:
Ken & Mary Campbell

BEHAVIOR

The chameleon's changing skin color plays an important role in communication. It changes with the influence of the lizard's mood, such as fear or anger, the amount of light, and the temperature or humidity. Males that can make themselves brighter tend to be more dominant and attract more females. Females use their colors to accept or reject a male; their color display can also signal that they have already mated and are pregnant.

Chameleons tend to take it slow. They can remain absolutely still when resting, and when they climb or move along branches, they move slowly and deliberately, sometimes swaying back and forth a bit like a leaf, so they blend into their surroundings. They have excellent balance, aided by a sure grip from their clutching feet and prehensile tail. When threatened, agitated, or excited, they may puff up their body to make themselves look bigger.

Both male and female chameleons are solitary and territorial. Males tend not to tolerate other males invading their home shrub or tree, and they will aggressively display and even chase off intruders. Males have larger territories than females and will roam and mate with more than one female during the breeding season. Females that have already mated are aggressive to other males that come along, and they may change to darker, more drab colors to visually indicate their status.



Reproduction

Chameleon courtship often begins with displays by males, including showing bright colors and a series of jerking or bobbing head movements. Some males advance slowly with a halting or jerky gait, but others move rapidly. A female that is unreceptive may move away or may face the pursuing male with a gaping mouth while hissing, rearing up on the hind legs, and rocking to discourage his advances.

In most chameleon species the female lays eggs, although a few, such as the Jackson's chameleon, are viviparous—giving live birth. In egg-laying species, the female climbs down to the ground and digs a hole. She



Photo credit: Dr. Tim Eppley

deposits the eggs in the hole, buries them, and leaves the nesting site. During incubation, the eggs absorb water from the earth and can gain up to 0.14 ounces (4 grams) in weight. The parents do not care for the young, and a few days after they hatch or are born, they begin to hunt insects on their own.

Conservation

Madagascar is home to nearly two-thirds of all chameleon species, and some are listed by IUCN as Critically Endangered:

- **Belalanda** chameleon, *Furcifer belalandaensis*
- Bizarre-nosed chameleon, *Calumma hafahafa*
- **Namoroka** leaf chameleon, *Brookesia bonsi*
- Tarzan chameleon, *Calumma tarzan*

Worldwide, chameleons are losing their habitat to agricultural practices, logging for construction or charcoal, cattle grazing, and human development. Chameleons are also at risk from collection for the pet trade.



Photo credit: Frank Glaw

Tarzan chameleon

