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GECKOS

Common house gecko

Hemidactylus frenatus

Hemidactylus frenatus is a sturdy, nocturnal gecko from South and Southeast Asia, which has followed ships and cargo out across the tropics and today lives in houses in large parts of the world. It climbs vertical surfaces, hunts insects under lamps and calls with a loud, ticking chatter. It is rare in captivity and is best known as an invasive species.

Family: Gekkonidae Former name: *Hemidactylus vittatus; Hemidactylus okinawensis*

KEY FACTS

THE ANIMAL

Adult size	**8-15 cm** total length incl. tail
Lifespan	**5-8 years**
Active	**At dusk and at night**
Lifestyle	**Arboreal and rock-dwelling**
Habitat	**Rainforest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**40 × 30 × 40 cm** L × W × H for 1 adult
Temperature, day	**25-30 °C**
Basking spot	**30-32 °C**
Temperature, night	**22-25 °C**
Humidity	**50-70%**
UVB	**Optional**
Diet	**Insects**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**6-12 months**
Clutch size	**1-2 eggs**
Incubation	**46-62 days** at 28-30 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Not Evaluated (NE)**

About the species

Hemidactylus frenatus is a small, pale grey-brown to beige gecko with almost translucent skin and a white underside. On the sides of the head a dark stripe runs between the eye and the nostril, and it has given the species its Latin name: *frenatus* means "bridled". The tail is round in cross-section and has distinct rings of larger, pointed scales, which give it a serrated appearance. Under the toes sit broad lamellae, so that it can run up walls and hang from ceilings.

Adults reach 8-15 cm including the tail, and males are usually slightly larger than females. There are no reliable figures for weight. The lifespan is about 5 years in the wild, and the animal can live 7-8 years; the upper limit is borrowed from the closely related *Hemidactylus turcicus*. The species was described in 1836 by Duméril and Bibron from animals from Java. The species has several synonyms, including *Hemidactylus vittatus* and *Hemidactylus okinawensis*, and two chromosome types have been found, so on closer examination the species may turn out to cover several closely related forms.

The gecko is a pronounced commensal of humans. It lives on house walls, in attics and behind trim and comes out after sunset to hunt insects attracted to lamps. It is known for its voice: a loud, ticking "chuk-chuk-chuk" of three to five notes, which the males use to mark territory and during mating. Males are aggressive towards conspecifics, and fights often end in bites and lost tails.

In enclosures it is rare, because it is common and lacks the colours and patterns that breeders otherwise value. In many countries it is also an unwelcome guest: it spreads easily with cargo and plants and displaces local geckos. If you want to keep the species, be extra careful that no animals or eggs escape.

Distribution and habitat

The original range of *Hemidactylus frenatus* is regarded as South and Southeast Asia and the nearest islands in Oceania. The map shows the core range: India, Sri Lanka, Bangladesh, Myanmar, Thailand, Cambodia, Laos, Vietnam, Malaysia, Singapore, Indonesia and the Philippines. The precise original range is hard to delimit, because the species has accompanied humans for a long time, and the range is often given as practically the whole of the tropics.

Outside Asia the species has been introduced. Today it is found in large parts of Africa (including the coast of East Africa, Madagascar and the Mascarene Islands), in Australia, in Central and South America, in the Caribbean and in the USA, including Florida, Texas and Hawaii. The spread has happened with ships, cargo and especially imported plants. Its arrival on the Mascarene Islands has almost wiped out a group of six *Nactus* geckos, of which three are now extinct. The registered records on the map are therefore scattered far beyond the original range.

> **Native range:** India, Sri Lanka, Bangladesh, Myanmar (Burma), Thailand, Cambodia, Laos, Vietnam, Malaysia, Singapore, Indonesia and Philippines.

HABITAT

In the wild *Hemidactylus frenatus* lives in warm, humid tropical and subtropical regions: on tree trunks, rocks and forest edges, but far more often on houses, walls and other buildings. It prefers places close to crevices where it can retreat. By day it sits hidden behind bark and trim and in cracks, but it can also use the day to bask. After sunset activity peaks, and around midnight the most animals are out.

The species does best at about 26-35 °C, where it can regulate its own body temperature by choosing sun or shade. It has few adaptations against water loss and therefore does less well in dry regions. Cold and rain dampen activity considerably. The figures for the enclosure are an estimate based on this and on relatives, because there are only a few detailed care descriptions.

Care

THE ENCLOSURE

A single adult *Hemidactylus frenatus* needs an enclosure of at least 40 × 30 × 40 cm (length × width × height). A pair needs at least 60 × 40 × 40 cm with many hides. Two males must never be kept together, and two females should be watched, because the animals are territorial.

The gecko prefers to sit on vertical surfaces and on the ceiling, so furnish with a back wall of cork or stone, cork tubes, flat pieces of bark and a few strong branches. Provide several crevices to hide in, both in the warm and the cool end. As substrate, a mix of unfertilised soil and coco fibre suits, with a little sphagnum on one side and some leaves on top. Plants such as pothos or bromeliads provide humidity and hides.

The species is a master at escaping. It can squeeze through very small gaps, so all openings, cable entries and joints must be sealed with fine mesh or silicone, and the lid must fit tightly.

Read more: Humidity, misting and ventilation

TEMPERATURE

Keep 25-30 °C in the enclosure during the day and 22-25 °C at night. Make a warm area of 30-32 °C, for example with a small heat bulb at one end, and leave the opposite end cool, so that the animal can choose.

Use a thermostat and a digital thermometer, so that you can measure both the warm and the cool end. Temperatures below 20 °C for a long time dampen appetite and activity, and above 33 °C is too hot. Keep the enclosure away from direct sun. The species can go into brumation in cooler regions, but in the enclosure no winter rest is recommended.

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

HUMIDITY AND WATER

Keep a humidity of about 50-70 %, and mist the enclosure lightly once a day, preferably in the evening, so that there is dew on leaves and stones. The humidity should be able to fall during the day. *Hemidactylus frenatus* has few adaptations against desiccation, so completely dry air is not good, but constantly wet conditions cause mould.

The gecko licks droplets from walls and leaves. Also put out a small, shallow bowl of fresh water, changed daily. A hygrometer shows whether the humidity holds.

LIGHTING AND UVB

Hemidactylus frenatus is active at dusk and at night, and there is no documented UVB recommendation. A weak UVB light for shade-dwelling animals (Ferguson zone 1) is a good safeguard for related, nocturnal geckos and here too, if there are many hides and room to avoid the light. Without UVB the food must contain vitamin D3.

Keep the light on 12 hours a day, controlled by a timer. Do not use strong spotlights or coloured night lights. At night it should be dark.

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

FEEDING

In the wild, *Hemidactylus frenatus* is a versatile hunter. Insects and spiders make up most of the diet: cockroaches, termites, flies, moths, beetles, bees and wasps. It also takes snails, a little nectar and sugary leftovers, and it eats smaller geckos. In laboratories cannibalism has also been seen, but it has not been observed in the wild.

In the enclosure it is fed live insects of a size smaller than the distance between the animal's eyes: crickets, small dubia roaches, fruit flies for the smallest and occasionally mealworms or waxworms. Adults get insects 3-4 times a week, young every day. Dust the insects with calcium at most meals and with calcium with D3 or a multivitamin once a week. Remove insects that are not eaten. Adjust the amount to the animal's condition: the tail should be plump, but not thick.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Hemidactylus frenatus is fast, nervous and should not be handled. It can bite if it is stressed, but the bite is rather weak and harmless to humans. The animal drops its tail if you grab it, and the tail does not grow back in the same shape. If an animal needs to be moved, use a small box. It leaps quickly from the hand, and escaped animals are a problem.

The species is territorial. The males fight among themselves and are more aggressive than most other geckos, also towards other species. Keep the animals singly, or one male with one female in a large enclosure with many hides, and separate them if one is bitten or constantly stays hidden. Never keep the species together with other geckos, because it can displace them and eat small animals.

Breeding

SEXUAL MATURITY AND SEXING

Males are usually slightly larger than females and have a visible bulge at the base of the tail and a row of pores in front of the vent. The sex can usually be seen in animals over 4 cm. The animals are sexually mature after about six to twelve months. Only breed females when they are fully grown and in good condition, so that they are not drained of calcium.

MATING

In tropical areas *Hemidactylus frenatus* breeds all year round, and in cooler areas there is a season. A male calls with his ticking voice, approaches the female and repeatedly touches her with his snout, and he may hold her by the neck during mating. The female can store sperm for up to a year, and one mating can give up to seven clutches, so the male can be moved out again after a few days. Give the female plenty of calcium and insects throughout the season.

EGG-LAYING AND CLUTCHES

The female lays at most two hard-shelled, round, white eggs at a time, three to four weeks after mating. Up to four eggs at different stages of development can lie in the ovaries, so there can be a short time between clutches. The eggs stick partly to the substrate and are laid in crevices, behind bark or behind trim. The number of clutches per year is not documented. Set up cork tubes, flat pieces of cork or bamboo tubes as laying sites, so that the eggs are easy to move. Egg laying is demanding, so watch the female's weight.

INCUBATION

The eggs can be hatched in a small box with air holes and slightly moist vermiculite or perlite. Keep the eggs at 28-30 °C; below 28 °C they do not develop. They hatch after 46-62 days. The species possibly has temperature-dependent sex determination, but this is not confirmed, so do not use temperature to steer the sex. Eggs that collapse or go mouldy are dead.

Read more: Incubating eggs

REARING THE YOUNG

The young are 5-6 cm long at hatching. Move them straight away to a small, tight-fitting faunarium with kitchen roll or sphagnum, some hides and a small water bowl, and mist daily. Feed with fruit flies and small crickets dusted with calcium every day. The young grow quickly and are sexually mature after six to twelve months. Keep them apart or in very small groups of similarly sized animals, because they can bite one another, and the larger ones can eat the smallest.

Health and common mistakes

There is little veterinary experience with *Hemidactylus frenatus* in captivity. The most likely problems are the same as in other small insectivorous geckos:

- Too little calcium and vitamin D3, which causes soft jaws, bent legs and tremors. Use calcium and a multivitamin, and consider a weak UVB light.
- Conditions that are too dry or too cold, which dampen appetite and cause skin problems and shed skin stuck on the toes and tail tip. Provide a humid hide, and gently loosen the remnants with lukewarm water.
- Stress and bites between animals, especially between males. Separate the animals, and provide many hides.
- Dropped tails after handling or fights. It is not dangerous, but the tail does not grow back in the same shape.
- Outbreaks: animals that escape often dry out and die, and in warm regions they can become an entire population. A tight enclosure is the best prevention.

A healthy animal has clear eyes, a plump tail and a good grip. See a vet experienced with reptiles if the gecko loses weight, does not eat for several weeks or seems limp.

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.