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GECKOS

Smith's green-eyed gecko

Gekko smithii

Gekko smithii is one of the largest geckos in the world: a sturdy forest dweller from the Malay Peninsula and southern Thailand with green eyes and white spots on the back. It is rare in vivaria, and its care relies heavily on the close relative *Gekko gecko*.

Family: Gekkonidae Former name: *Gecko smithii; Gekko stentor*

KEY FACTS

THE ANIMAL

Adult size	**19 cm** snout-vent length
Lifespan	**10-20 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 60 × 120 cm** L × W × H for 1 adult
Temperature, day	**26-29 °C**
Basking spot	**30-33 °C**
Temperature, night	**23-26 °C**
Humidity	**60-80%**
UVB	**Recommended** Ferguson zone 1
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**2 eggs**
Incubation	**60-180 days** at 25-30 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Least Concern (LC)**

About the species

Gekko smithii is among the largest geckos in the world. The body alone, measured from snout to vent, grows to 19 cm, and the total length is probably up to 35 cm including the tail. The head is broad and heavy, the eyes are large and green with a vertical pupil, and on the back sit large white rings around the enlarged tubercles in the skin, arranged in six or seven transverse rows. Across the neck run a thin white band of dense spots and a thin dark band that reaches up to the eyes, and the back has a strong dark net pattern or indistinct crossbands. Males have 13-15 pores in front of the vent, which females lack, and that is the surest way to tell the sexes apart.

The species was described by the English zoologist John Edward Gray in 1842 from animals from Pulau Pinang and is named after the Scottish zoologist Andrew Smith. For many years the name was used for a very broad population of large forest geckos from Thailand across Malaysia to Sumatra, Borneo and Java. Since 2022 the name has been split into four species, and *Gekko smithii* proper lives in only a smaller part of the area. Older information and animals sold under the name therefore do not necessarily belong to the species.

The relative *Gekko gecko* resembles the species and is far better known in enclosures. *Gekko smithii* is rare in captivity, and its care is based on *G. gecko* and on large, nocturnal forest geckos in general. The lifespan is not known, and the 10-20 years in the fact box is borrowed from *G. gecko*. Expect a large, powerful and defensive animal that is not suited to handling.

Distribution and habitat

Gekko smithii lives in southern Thailand (the provinces of Satun, Narathiwat and Pattani) and on the Malay Peninsula, including Pulau Pinang, Pulau Pangkor and Pulau Tioman and in the states of Perak, Pahang and Selangor. The type locality is Pulau Pinang.

The range was narrowed in 2022. Previously Sumatra, Borneo, Java and the southern part of the peninsula were also included, but the records from the southern part of the peninsula, Borneo and Sumatra have now been assigned to the closely related *Gekko hulk*, *G. albofasciolatus* and *G. albomaculatus*. The species is also reported from West Lombok in Indonesia. This is an isolated record far from the rest of the range, and Indonesia is therefore not among the countries on the map. Recorded finds from Sumatra, Borneo and the rest of Indonesia may belong to the neighbouring species.

> **Native range:** Thailand and Malaysia.

HABITAT

Gekko smithii lives in forest. Like other large forest geckos in the region, it presumably uses tree trunks, hollows and crevices in the rainforest, where it hunts at night.

The climate on the Malay Peninsula and in southern Thailand is tropical and humid all year round. The temperature typically lies between 23 and 33 °C, and heavy rainfall occurs, especially in the monsoon seasons. There is no cold winter. The figures apply to the region as a whole.

Care

THE ENCLOSURE

The dimensions for *Gekko smithii* follow *Gekko gecko*, which is almost as large. A single adult needs a tall enclosure of at least 60 × 60 × 120 cm (length × width × height), and bigger is better. Height is important, because the gecko lives in the trees.

Furnish with solid branches, thick cork tubes and large pieces of cork bark, so that the animal can sit vertically and hide by day, and with a cork back wall where it can climb. Live or artificial plants give cover and hold the humidity. Use a moisture-retaining substrate layer of coconut coir and unfertilised soil, and ensure good ventilation with mesh both at the top and at the bottom.

The enclosure must be absolutely escape-proof, with a lid that can be locked. Large geckos are strong and persistent and quickly find a gap. Keep the species alone. In *G. gecko* even a pair can be rough on each other.

Read more: Humidity, misting and ventilation

TEMPERATURE

The temperatures suit the warm, tropical climate of the species' homeland. By day the enclosure should be 26-29 °C, and a warm spot under a lamp may reach 30-33 °C. At night the temperature may fall to 23-26 °C. In most homes this requires an extra, dim-light heat source, for example a ceramic heat emitter, controlled by a thermostat.

Always provide a gradient, so that the animal can choose between warm and cooler zones, and measure with digital thermometers both at the top and at the bottom. An animal that sits with its mouth open at the coolest spot is too hot. An animal that never comes out and loses its appetite may be too cold.

Read more: Heat and temperature

HUMIDITY AND WATER

Keep the humidity at 60-80 %, and let it fluctuate: mist the enclosure thoroughly in the evening, so that the humidity rises, and let the substrate and branches dry out somewhat during the day. Constantly wet conditions cause mould and skin problems, and air that is too dry causes shedding problems.

Put out a stable, heavy water bowl, and change the water daily. Also mist leaves and furnishings, so that *Gekko smithii* can lick the droplets. A hygrometer tells you whether the rhythm holds.

Read more: Common diseases and signs of illness

LIGHTING AND UVB

Gekko smithii is nocturnal, and its need for UV light is not known. As for other nocturnal geckos, a weak UVB light in Ferguson zone 1 is recommended, for example a 5-7 % T5 tube, mounted so that the UV index is at most about 1-2 on the uppermost branches, and so that there is always shade in the rest of the enclosure. Without UVB, the gecko must get vitamin D3 through the calcium supplement.

Keep the light on for 12 hours a day all year round, preferably controlled by a timer, and keep it completely dark at night. Avoid strong spotlights, which dry out the air and dazzle the animal.

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

FEEDING

Gekko smithii eats insects, especially grasshoppers. The staple is crickets, dubia roaches and grasshoppers, supplemented with waxworms, hornworms or superworms as a treat. The feeder insects should be smaller than the gecko's head and should have been fed a good diet beforehand. Dust them with calcium (with vitamin D3 if you do not use UVB), and give a multivitamin regularly.

Young animals are fed every day, adults every second to third day with as much as they eat in about five minutes. Large geckos easily become too fat, so keep an eye on weight and body shape. The closely related *Gekko hulk* also eats smaller geckos, but this is not necessary in the enclosure.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Expect a temperament like that of the relative *Gekko gecko*, one of the most defensive geckos in the trade: a large, powerful animal that hisses, opens its mouth wide and bites when it feels threatened. The bite hurts and can draw blood, and the animal holds on with its jaws. Do not pull free, but wait until it lets go.

The animal should therefore be watched and cared for with respect and not handled for fun. Move it to a large box when the enclosure needs cleaning. Keep it alone, and give it many hides so that it can withdraw. The males are presumably territorial and may call loudly at night as in *G. gecko*, and this is worth thinking about if you live close to neighbours.

Breeding

SEXUAL MATURITY AND SEXING

Males are recognised by 13-15 pores in front of the vent, which females lack. Age and weight at sexual maturity are not known for *Gekko smithii*. In *Gekko gecko* the animals become sexually mature after one to three years, and females should only be bred when they are fully grown and in good condition, because egg laying drains them of calcium.

MATING

Mating in *Gekko smithii* is not known. In *Gekko gecko* the male is put in with the female in her enclosure and removed again if he is too rough, and there must be many hides. Mating can be violent, and both animals can be injured. The season presumably follows day length and the rainy season. Only consider breeding if you have experience with *Gekko gecko* or similar large geckos and can obtain documented, captive-bred animals.

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

EGG-LAYING AND CLUTCHES

The female lays two eggs at a time. The eggs are almost spherical and measure on average about 20 × 19 mm. The number of clutches per year is not known. In *Gekko gecko* the eggs are stuck to vertical surfaces, and the female lays several clutches at about monthly intervals. Give the female two flat pieces of cork bark with a few centimetres between them as a laying site, and give plenty of calcium and insects.

INCUBATION

The incubation of *Gekko smithii* follows that of *Gekko gecko*, whose eggs stick so firmly that they cannot be prised off without breaking. Leave them where they are, or move the whole cork board with the eggs into an incubator, and keep them at 25-30 °C with high humidity, without letting them get wet. In *G. gecko*, hatching takes between two and six months depending on the temperature.

Use an incubator with a thermostat, and check the eggs without touching them. Eggs that collapse or turn mouldy are usually dead.

Read more: Incubating eggs

REARING THE YOUNG

Rearing of *Gekko smithii* is not known. In *Gekko gecko* the young hatch as small but well-developed animals, which should be kept separately in small, humid faunaria with hides and water. They are given small crickets dusted with calcium with vitamin D3, while they grow quickly in the first year. Young large geckos can be aggressive towards each other, so keep them apart.

Health and common mistakes

The typical problems in *Gekko smithii* are the same as in other large geckos in enclosures:

- Too little calcium and vitamin D3, especially in young animals and breeding females. It causes soft jaws, bent limbs and tremors. Dust the insects, and use UVB or D3 in the food.
- Humidity that is too low or too little water, which causes shedding problems and dry eyes. Shed skin stuck on the toes and tail tip can constrict them, so gently loosen it with lukewarm water.
- Parasites and underweight in wild-caught animals. Wild-caught animals should be examined by a vet, and faecal samples checked.
- Bites during handling, which can cause infection. Clean the wounds and see a doctor if they look bad.
- Obesity from too frequent feeding.

A healthy animal has clear eyes, a well-shaped tail and a solid 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.