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AGAMAS

Spotted butterfly lizard

Leiolepis guttata

Leiolepis guttata is a ground-dwelling, diurnal agamid from the coastal regions of central and southern Vietnam. It is one of the largest species in the genus, with a total length of up to about 55 cm, has many pale spots on the back and digs burrows. The species is poorly known in captivity and requires a spacious, dry enclosure with a deep, diggable substrate, strong heat and UVB.

Family: Agamidae English name: Spotted Butterfly Lizard

KEY FACTS

THE ANIMAL

Adult size	**40-55 cm** total length incl. tail
Lifespan	**8-10 years**
Active	**By day**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Savanna**
Difficulty	**Intermediate**

CARE

Min. enclosure	**150 × 60 × 60 cm** L × W × H for 2 adults
Temperature, day	**26-35 °C**
Basking spot	**35-37 °C**
Temperature, night	**20-25 °C**
Humidity	**30-50%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects and plants**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**2-8 eggs**
Incubation	**55-100 days** at 27-33 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Data Deficient (DD)**

About the species

Leiolepis guttata is a flattened, slender agamid with a rounded head, a long tail and very small, granular dorsal scales. The body is more flattened than the rounder tail. The back has many pale spots and patches and two pale longitudinal stripes along the sides of the back, and the species name *guttata* means precisely "spotted" in Latin. Both sexes have femoral pores, and the species has neither a throat pouch nor crests.

It is one of the largest species in the genus. The snout-vent length is normally up to 18 cm, but can reach 25 cm. The tail is a good twice as long as the body and up to 37 cm, so large animals measure about 55 cm in total.

The species was described in 1829 and is the type species of the genus *Leiolepis*. It reproduces sexually and has 36 chromosomes. *L. guttata* can hybridise with *Leiolepis reevesii*, and repeated crosses between the two species have given rise to the genus's four pure all-female species. *Leiolepis guentherpetersi*, which lives in the same area, has three sets of chromosomes: two from *L. guttata* and one from *L. reevesii*. When buying, it is worth making sure the animal has been identified correctly, because the species of the genus are hard to tell apart.

Distribution and habitat

Leiolepis guttata lives in Vietnam, in the coastal provinces from Thua Thien Hue and Quang Nam in central Vietnam through Khanh Hoa, Ninh Thuan and Binh Thuan to Ba Ria-Vung Tau and Dong Nai in the south. The type locality is given as Cochinchina, the old name for southern Vietnam. The populations in the north and south belong to two genetically distinct lineages.

> **Native range:** Vietnam.

HABITAT

The habitat is only sparsely described. *Leiolepis guttata* is diurnal and ground-dwelling and digs burrows like the other species of the genus, which are highly specialised for a life both above and below ground. The species is found in the coastal provinces, where the closely related *Leiolepis guentherpetersi* lives on sandy coastal dunes with scattered shrubs and grass, both along the coast and several kilometres inland.

Care

THE ENCLOSURE

There is little knowledge about the care of *Leiolepis guttata*. Temperature, humidity, light and lifespan are therefore based on *Leiolepis belliana*, the best-known species in the genus. *L. guttata* grows larger, so the enclosure must also be larger.

A pair needs an enclosure of at least 150 × 60 × 60 cm (length × width × height), a single animal at least 120 × 60 × 50 cm. Floor area is most important, because the species is ground-dwelling, but the height must accommodate a deep substrate.

The substrate should be at least 20 cm deep and consist of a mix of sand and unfertilised garden soil, so the burrows hold. The bottom layer is slightly damp, the rest dry. Lay flat stones, cork and roots, so the animal has basking spots and hides, and fix them in place so they cannot be undermined and topple over. Ventilation must be good, and the lid must be lockable, because the animals are fast and shy.

Read more: Humidity, misting and ventilation

TEMPERATURE

The basking spot should have a surface temperature of 35-37 °C. The air at the warm end is 30-35 °C, and the cool end is 26-29 °C. At night the temperature falls to 20-25 °C.

The animal must always be able to move away from the heat, down into the substrate or into a hide. Use halogen spots or ceramic heaters with a guard in front and a thermostat. Measure with digital thermometers and an infrared thermometer, and check the basking spot regularly. An animal that constantly seeks shelter from the heat is too hot, and an animal that does not bask is too cold.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be 30-50 %, and the enclosure should be dry. The bottom layer of the substrate is kept slightly damp, so the burrows do not collapse, but the surface must not be wet, because that causes mould. The animal needs a bowl of fresh water, which is filled daily.

LIGHTING AND UVB

The species is diurnal and basks in open country, so it needs strong light and UVB. Use a tube or LED of 6,500 K over the whole enclosure and a T5 HO UVB tube of 10-12 % over the basking spot. The Ferguson zone has not been established for the genus; zone 3 suits a lizard that basks in open country. Check the distance with a UV meter, and replace the tubes according to the manufacturer's instructions. The light must be on for 10-12 hours a day.

Read more: Lighting and UVB

FEEDING

Leiolepis guttata feeds mainly on plants, but also eats insects. The staple is dark green leaves such as dandelion, cabbage leaves and mustard greens as well as flowers, which are offered every day. Supplement with crickets, roaches and grasshoppers. Fruit is given only sparingly, and lettuce has almost no nutritional value.

Juveniles and adults are fed every day. Dust the insects and the vegetables with calcium at every feed and with a multivitamin with D3 once a week. Vary the food.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The animal is shy and fast and flees into a burrow when anything moves. It tolerates handling poorly and suits a keeper who wants to watch an animal that digs and basks.

The animals can be kept singly or in pairs. Two males must not be put together, because they fight. Provide plenty of basking spots and hides, and quarantine new animals.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

Both sexes have femoral pores, so they cannot be used to tell the sexes apart. How males and females otherwise differ, and when the species becomes sexually mature, has not been described in detail. A female must be fully grown and in good condition before mating, because egg-laying drains her of calcium and strength.

MATING

The species reproduces sexually. Mating season and behaviour are not documented, and it is also not known whether a cool rest period promotes breeding. Keep the pair together for as long as it goes peacefully, and give each animal its own hide.

EGG-LAYING AND CLUTCHES

A clutch is about 5 eggs; the figure is based on a single clutch. In the close relative *Leiolepis reevesii* the clutch is 2-8 eggs. The female lays the eggs in a burrow. Give the female the chance to dig a burrow in deep, slightly moist substrate at the warm end of the enclosure. A female without a suitable site can retain the eggs, and that is life-threatening.

INCUBATION

Incubation has not been described for the species. In *Leiolepis reevesii* the eggs hatch after about 70 days at 30 °C, after 55 days at 33 °C and only after about 100 days at 27 °C, and temperature does not determine the sex. 30 °C is therefore a good starting point. Carefully dig up the eggs without turning them, and place them in damp vermiculite in a closed box in an incubator with a thermostat.

Read more: Incubating eggs

REARING THE YOUNG

The hatchlings need an enclosure of their own with a deep substrate and many hides. Feed them daily with finely chopped greens and small insects, dust with calcium, and provide UVB. Juveniles grow fast, and too little calcium and UVB causes metabolic bone disease.

Read more: Common diseases and signs of illness

Health and common mistakes

The species is rare in captivity, so diseases have not been described for it. Based on the needs of the genus, these are the problems most likely to occur:

- Metabolic bone disease when UVB or calcium is lacking. Soft jaws and trembling or crooked legs are signs.
- Digestive problems and obesity if the diet has too many insects and too few greens. The species feeds mostly on plants.
- Snout injuries in shy animals that repeatedly run against the glass. Many hides and covered sides provide calm.
- Parasites in imported animals. Have a faecal sample examined during quarantine.
- Egg-laying difficulties in females without a deep, damp digging substrate.

- Mould and skin problems from a substrate that is too wet.

Contact a vet if the animal is lethargic, has no appetite, has swollen joints or has problems shedding.

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.