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AGAMAS

Thai butterfly lizard

Leiolepis triploida

Leiolepis triploida is a ground-dwelling, diurnal agamid from the Malay Peninsula in which all animals are female. The species has three sets of chromosomes and reproduces by parthenogenesis: the eggs develop without a male, and the hatchlings are genetic copies of the mother. It is large and very long-tailed, digs burrows and requires a dry enclosure with a deep substrate, strong heat and UVB.

Family: Agamidae English name: Thai Butterfly Lizard

KEY FACTS

THE ANIMAL

Adult size	**30-45 cm** total length incl. tail
Lifespan	**8-10 years**
Active	**By day**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Savanna**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 50 cm** L × W × H for 1 adult
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**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1-3 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 triploida is a large, slender agamid with a very long tail. The body length from snout to vent is 10-15 cm, and the tail is a good twice as long as the body, up to 30 cm. The total length is thus about 30-45 cm.

The back has three pale, unbroken longitudinal stripes, of which the middle one is always the palest. Between the stripes there are pale, eye-like spots set close together, and their dark edges form a net of polygonal meshes. The neck and flanks lack the contrasting crossbands that *Leiolepis belliana* has; instead there are only indistinct cross-stripes or dots in sulphur yellow to orange-yellow. The belly scales are smaller than in *L. belliana*.

All animals are female. The species is triploid, with three sets of chromosomes (3n = 54) instead of two, and reproduces by parthenogenesis without the participation of a male. It arose by hybridisation between other species in the genus, and its origin is composite. Mitochondrial DNA, which is inherited only from the mother, points to the diploid all-female species *Leiolepis boehmei* as the maternal species, and that species itself descends from *Leiolepis guttata* on the maternal side. Analyses

of several genes show that all four all-female species of the genus arose through repeated crosses between *L. guttata* and *Leiolepis reevesii*. When it was described in 1971 the species was regarded as a derivative of *L. belliana*. The species name refers to the three sets of chromosomes.

Fertility is limited: only about 30 % of adult females are fertile. The animal is shy and flees into its burrow when disturbed.

Distribution and habitat

Leiolepis triploida lives on the Malay Peninsula: in southern Thailand, including Songkhla, and in northern Peninsular Malaysia, including Kedah, Perlis and Perak, with a few records further south. The type locality lies in the border region between Thailand and Malaysia.

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

HABITAT

The habitat is hardly described. *Leiolepis triploida* 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 closely related all-female species *Leiolepis boehmei* lives in the same area in southern Thailand. In Thailand the species of the genus live in open, sandy areas on flat terrain, and a similar habitat is likely. The climate on the Malay Peninsula is tropical and warm all year.

Care

THE ENCLOSURE

There is little knowledge about the care of *Leiolepis triploida*. Care is therefore based on *Leiolepis belliana*, the best-known species in the genus. The species is large and very long-tailed, so the enclosure must be spacious.

An animal needs an enclosure of at least 120 × 60 × 50 cm (length × width × height). Floor area is most important, 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.

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. Whether the species needs higher humidity is not documented.

Read more: Humidity, misting and ventilation

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

The diet has not been studied for *Leiolepis triploida*. The species of the genus eat both plants and insects, and in several of them plants make up the bulk. Offer dark green leaves such as dandelion, cabbage leaves and mustard greens as well as flowers every day, and give crickets, roaches and grasshoppers. Fruit is given only sparingly.

Juveniles and adults are fed every day. Dust the food 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.

Because all animals are female, there is no risk of fights between males. Whether several animals can be kept together in a large enclosure is not documented, and a single animal is the safe choice. Provide plenty of basking spots and hides, and quarantine new animals.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

There are no males. Age and size at sexual maturity are not documented. The female must be fully grown and in good condition before she lays eggs, because egg-laying drains her of calcium and strength.

MATING

Mating does not occur. *Leiolepis triploida* reproduces by parthenogenesis: a female lays eggs without having been with a male, and the hatchlings are genetically identical to her. Do not keep her with males of other *Leiolepis* species. All-female species in the genus can mate with males of related species, and the offspring may then acquire yet another set of chromosomes and become sterile.

EGG-LAYING AND CLUTCHES

The clutch is small, 1-3 eggs; the figure is based on few animals and on the likewise triploid *Leiolepis guentherpetersi*. Many females are sterile, so it is normal for a female not to lay eggs. Give the female the chance to dig a burrow in a deep, slightly damp substrate at the warm end of the enclosure. A female without a suitable site may 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 are all female and are moved to 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

In the likewise triploid *Leiolepis guentherpetersi*, more animals die in the enclosure than in the sexual species under the same conditions, and the same may apply to *L. triploida*. The species therefore requires extra care. Watch in particular for:

- Metabolic bone disease from too little UVB and calcium.
- Egg-laying difficulties. Even though many females are sterile, a fertile female can produce eggs; always provide a deep,

damp digging substrate.

- Parasites in imported animals. Have a faecal sample examined during quarantine.
- Intestinal blockage if the animal swallows large amounts of loose sand.
- Mould and skin problems from a substrate that is too wet.

Contact a vet if the animal is lethargic, loses weight, has no appetite 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.