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ANGUIDS

Imbricate Alligator Lizard

Barisia imbricata

Barisia imbricata is a sturdy, diurnal alligator lizard from the cool mountain forests and grasslands of Mexico's central highlands, often at 2,500-3,500 m. It grows to 25-35 cm; the male is uniformly brown or green, and the female has pale crossbands. The species gives birth to 7-16 live young. Husbandry is only sparsely described, so this guide is based on the species' climate and on the close relative *Gerrhonotus infernalis*.

Family: Anguidae

KEY FACTS

THE ANIMAL

Adult size	**25-35 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Montane forest and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**90 × 60 × 60 cm** L × W × H for 2 adults
Temperature, day	**20-25 °C**
Basking spot	**30-34 °C**
Temperature, night	**8-14 °C**
Humidity	**40-70%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Diet	**Insects and worms/snails**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Live-bearing**
Litter size	**7-16 young**
Clutches per year	**1**
Gestation	**190-215 days**

PROTECTION AND PAPERWORK

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

About the species

Barisia imbricata is a sturdy alligator lizard with a broad head, short limbs, a long, thick tail and large, keeled scales that overlap like roof tiles. The name *imbricata* means precisely "overlapping". The genus name *Barisia* comes from the Greek word for "heavy" and points to the robust body.

The sexes can be told apart by colour. Males are uniformly brown, olive or green. Females are brown with pale crossbands across the back. Occasional animals show the pattern of the opposite sex, so colour alone is not a reliable sign of sex. Males have a larger head, stronger jaws and greater weight than females, but the length is the same: body and head reach up to around 14 cm, and with the tail the animal reaches 25-35 cm. Tail length is an estimate, because the tail is often lost and regrown. An adult female weighs about 30 g.

The species was described by Arend Friedrich August Wiegmann in 1828 under the name *Gerrhonotus imbricatus* and is the type species of the genus. Several populations were formerly regarded as subspecies, but they are now separate species, among them *Barisia ciliaris*. Older husbandry information under the name *B. imbricata* may therefore apply to closely related

species.

Males bite each other in fights over territory, and almost all have lost the tail at least once. The animal is shy and bites hard if grabbed. Lifespan in captivity is not documented; 10-15 years is an estimate.

Distribution and habitat

Barisia imbricata lives only in Mexico and occurs chiefly in the Trans-Mexican Volcanic Belt, with records from Jalisco, Michoacán, México, Morelos, Hidalgo, Puebla, Veracruz and Oaxaca, among others. The type locality is restricted to the Distrito Federal, present-day Mexico City. The range is fragmented by agriculture and development.

Populations that were formerly included, for example from Querétaro, now belong to other species, among them *Barisia ciliaris*, and are not included on the map.

> **Native range:** Mexico.

HABITAT

Barisia imbricata lives in temperate pine and fir forest and on bunchgrass grassland, along fences, stone walls and ditches where there are rocks and cover. The species occurs from about 2,100 m up to about 4,000 m, and most records are from 2,500-3,500 m. Days are mild and nights are cool; the rainy season is in summer, and winter is dry and cool.

The animal is diurnal and mainly ground-dwelling, but also climbs in bushes and trees. It shelters under rocks, in crevices and in grass tussocks and actively hunts insects, spiders and other arthropods; small vertebrates are occasionally taken. Active animals in the wild have a body temperature of about 22 °C on average, but the species can be active from about 9 °C to about 37 °C. It prefers a body temperature of about 28 °C, and the critical limit is at about 37 °C.

The species is assessed as Least Concern (LC) by the IUCN.

Care

THE ENCLOSURE

Little is known about keeping *Barisia imbricata*. The species lives in a cool highland with mild days, cold nights and rain in summer. The close relative *Gerrhonotus infernalis* has the same way of life and is far better known in captivity; *Gerrhonotus liocephalus* and *Elgaria multicarinata* can also be used for comparison. The figures for enclosure, lighting and humidity are borrowed from *G. infernalis*, while the temperatures are based on measurements of *B. imbricata* itself and on the highland climate.

A pair needs an enclosure of at least 90 × 60 × 60 cm (length × width × height). Larger is better, because the animals use the whole floor and some of the height. Several males must not be kept together: they fight, and tails and skin suffer.

The substrate is a deep mixture of sand, gravel and garden soil or peat, covered with a thick layer of leaf litter and dry grass, so the animals can dig and hide. Furnish with flat stones, bark and slate as hides and with branches at several heights. Live plants such as bunchgrass, agaves and ferns provide cover. A moist substrate under a water bowl gives a humid hide. Choose an enclosure that keeps the temperature stable and can be kept cool at night; mesh or well-ventilated glass works better than sealed enclosures in summer.

Read more: Humidity, misting and ventilation

TEMPERATURE

During the day the air in the enclosure should be 20-25 °C, with a basking spot of 30-34 °C under a halogen spot, where the animal can warm up to about 28 °C. The basking spot must not be any hotter: the animal tolerates only about 37 °C, and above 30 °C activity falls sharply. At night it should be cool, around 8-14 °C, and the night figure is an estimate based on the highland climate. Measure with digital thermometers.

Temperature and day length follow the season: warmest in summer, cooler with shorter days in winter, so the animal is less active and eats less. A true winter rest is not documented, and gravid females should not be cooled down further. Frost is never acceptable.

Make sure the animal can always move away from the heat, and replace the bulbs when they lose output.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be moderate, around 40-70 %, with higher humidity in the hides. The figure is borrowed from *G. infernalis*. Mist the enclosure two to three times a week in summer to imitate the rainy season, and less often in winter. Always provide a shallow bowl of fresh water in the enclosure, and overfill it now and then so the substrate around it becomes moist. The animal rarely drinks from the bowl and covers part of its needs through its food and the humid hides.

The enclosure must dry out between mistings, so mould does not develop.

LIGHTING AND UVB

The species is diurnal and needs strong light and UVB. Use a T5 HO tube so that the UV index runs from 0 to 3 through the enclosure, corresponding to Ferguson zone 2, and so the animal can move out of the UV light. The distance between tube and basking spot depends on the strength of the tube and on any mesh, and it should be checked with a UV meter. Supplement with LED light of around 6,000 K if there are live plants.

Connect the light to a timer that follows the season: about 14 hours in summer and about 10 hours in winter.

Read more: Lighting and UVB

FEEDING

Barisia imbricata feeds on insects and other small animals and hunts actively. Offer a varied diet of crickets, cockroaches, grasshoppers, mealworms, waxworms, stick insects, woodlice, snails, spiders and fly larvae. Feeder animals should be no larger than the animal's head and should have been well fed for at least a day.

The animal readily takes food from tweezers, which provides good exercise. Juveniles are fed every other day, adults two to three times a week. Dust the food with calcium and a multivitamin without D3, because UVB covers the need for D3. Gravid females need extra calcium and more food.

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

BEHAVIOUR AND HANDLING

The species is shy, but can become calm in time. It basks on rocks and grass tussocks and hunts by stalking its prey. A frightened animal bites hard, and a bite can hurt, so handle the animal only when necessary. Wild-caught animals are far more nervous than captive-bred ones.

Males are territorial and fight, so they must be kept separately. A pair can be kept together if there is enough space and cover, but separate them if one is wounded. The tail can be shed as a distraction and regrows only partially. Wash your hands after contact with the animal and enclosure, because reptiles can carry salmonella.

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

Breeding

SEXUAL MATURITY AND SEXING

Sex is seen first and foremost from colour: males are uniformly coloured, females have pale crossbands, but occasional animals show the opposite pattern. Males have a larger head and a distinct bulge at the base of the tail. Females can bear young from a snout-to-vent length of 8-10 cm, depending on the population. Age at sexual maturity is not documented for the species.

MATING

Mating takes place in autumn, around October. The male grips the female by the neck with his mouth. Give the female good condition from late summer and separate the animals if she is wounded. Males must be kept apart, so they do not fight over the female.

EGG-LAYING AND CLUTCHES

The species gives birth to live young and does not lay eggs. Mating is followed by ovulation in November and early December, and gestation lasts through the winter and most of the spring; the young are born in May or June. The female has at most one litter a year. A litter is 7-16 young. Large females have the most, and females from the highest regions have fewer. Give the female plenty of food and calcium throughout gestation and leave her in peace.

INCUBATION

There are no eggs to incubate. Gestation lasts 27-31 weeks, that is 190-215 days, counted from ovulation, and that is the figure given in the specification box. Keep the female in peace in a cool, humid and ventilated enclosure with hides, and continue with the seasonally varying temperature. Separate the female from other animals before she gives birth.

REARING THE YOUNG

Newborn young are often uniformly coloured like the males, and the females' crossbands appear only later. The young have the same requirements as the adults. Offer them small crickets, fruit flies, fly larvae and small cockroach nymphs, dusted with calcium. Feed every other day, but do not give more than the young manage to eat. Keep them apart or in small groups with many hides, so they do not nip each other, and separate the males when they become sexually mature.

Health and common mistakes

The species is hardy when the requirements for cooling and light are met, but little is known about its diseases. The typical problems for alligator lizards are:

- Overheating, if the basking spot is too hot or the enclosure too warm at night.
- Brittle bones from too little UVB and calcium, especially in juveniles and gravid females.
- Obesity from fatty feeder animals and too little exercise.
- Mites and internal parasites. New animals should be quarantined for at least three months.
- Mould and respiratory infection from air that is too damp and stagnant.
- Bite and tail injuries between males that are kept together.
- Birthing problems and dead young in gravid females that are stressed or cold.

A healthy animal has bright eyes and a plump tail and eats regularly. If the animal loses weight, does not eat or breathes with its mouth open, it must see a vet experienced with reptiles.

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.