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CAECILIANS

Mexican Caecilian

Dermophis mexicanus

Dermophis mexicanus is a large, limbless, burrowing caecilian from Mexico and Central America. It looks like a big earthworm, lives in moist, loose soil and gives birth to live young after a gestation of 11 months. Little is known about keeping the species.

Family: Dermophiidae

KEY FACTS

THE ANIMAL

Adult size	**30-60 cm** total length incl. tail
Lifespan	**5-10 years**
Active	**At dusk and at night**
Lifestyle	**Burrowing**
Habitat	**Dry forest, rainforest and montane forest**
Skin toxins	**None known**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 40 × 45 cm** L × W × H for 1 adult
Temperature, day	**22-25 °C**
Temperature, night	**21-23 °C**
Humidity	**90-100%**
Water	**No water dish**
UVB	**Not required**
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly or in groups**

BREEDING

Reproduction	**Live-bearing**
Development	**Live-bearing**
Sexually mature	**24-36 months**
Litter size	**3-16 young**
Gestation	**335 days**
Parental care	**None**

PROTECTION AND PAPERWORK

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

About the species

Dermophis mexicanus is an elongated, limbless amphibian with no external ears and small eyes beneath the skin. The body is dark grey above and pale below, where the rings are darkly outlined, and about a hundred transverse skin folds give it a segmented look like an earthworm. The head has a pointed snout, and between the eye and the nostril sits a small tentacle, which the animal uses to find prey in the dark. Adults are 30-50 cm long, in some populations up to 60 cm, and the species is rather stout for a caecilian. Weight and lifespan are not known; the lifespan in the specification box is an estimate.

Reliable external differences between the sexes have not been described.

No skin toxicity has been described in the species. Like other amphibians, it has glands in the skin, so wash your hands after handling, and do not touch your eyes or mouth.

Distribution and habitat

Dermophis mexicanus ranges from southern Mexico (Guerrero on the Pacific side and Veracruz on the Atlantic side) through Guatemala, El Salvador, Honduras and Nicaragua to Costa Rica and northern Panama. It is most widespread on the Atlantic side, but also occurs in separate areas on the Pacific side. Occurrence in Belize is possible but unconfirmed.

The species is not threatened (IUCN: LC), but populations are fragmented, and in several regions where it was once common it has become rarer.

> **Native range:** Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama.

HABITAT

Dermophis mexicanus burrows in moist, loose soil and is found under leaf litter, logs and plant debris in dry and humid lowland forest, in montane forest up to about 1,200 m and in cultivated land such as coffee and banana plantations, village gardens and heavily disturbed forest. It does particularly well where coffee husks lie rotting, so that the soil becomes moist and rich in earthworms.

The animal digs its own tunnels and lies in wait for prey. At dusk and at night, especially in light rain, it comes up to the surface. The diet is earthworms, termites, young grasshoppers and crickets, snails and other small animals; large animals also take small lizards and newborn mice.

Read more: Feeder animals: keeping and breeding

Care

THE ENCLOSURE

Little is known about keeping *Dermophis mexicanus*, but the species is one of the terrestrial caecilians most often found in the trade. *D. mexicanus* is kept in a tight-fitting box of thick-walled plastic or a terrarium with a secure lid and a deep substrate to dig in. An adult needs at least 60 × 40 × 45 cm, so that there is room for 25-35 cm of substrate and an air space above. The lid must close tightly and have a weight on top: an animal that can reach the lid will escape through the smallest gap, and feeder worms also crawl out. Provide ventilation with small holes in the sides just below the rim, covered with fine mesh; there must be no holes in the lid.

The substrate is the most important decision. Unbleached paper fibre (unscented paper-based bedding) is well proven: it holds moisture, the worms live in it, and caecilians clearly prefer it to coconut fibre. Sterilised, unfertilised topsoil can also be used. Coconut fibre alone is not recommended: it is dusty, clings to the skin and can compact into a hard plug in the gut. Replace the substrate every 4-5 months, or sooner if it becomes dirty, and check the animal at the same time.

Place a flat piece of heat-treated bark or wood on the surface. The animals like to lie just under it, and it makes it easy to check on them without digging. Live plants are not necessary.

TEMPERATURE

Keep 22-25 °C by day and 21-23 °C at night. The temperature must be stable and vary by no more than about 3 °C; rapid and large fluctuations are poorly tolerated. If the box is kept in a room with an even temperature, heating is rarely needed. A heat mat under one end provides a temperature and moisture gradient that the animal can choose from; the substrate dries out a little over the heat, so keep an eye on the moisture. If the animal stays on the surface instead of burrowing, the temperature, moisture or substrate is wrong.

Read more: Heat and temperature

HUMIDITY AND MISTING

The substrate must be evenly moist, but not so wet that water can be squeezed out of a handful, and there must never be standing water at the bottom of the box. The air in the box is practically saturated (90-100 %). Maintain the moisture by misting and turning the substrate now and then, and leave one end slightly drier than the other. Use bottled water, rainwater or tap water that has stood for a day.

WATER AND WATER QUALITY

There should be no water bowl. The animal gets water from the moist substrate and from condensation on the walls of the box, and a water bowl easily makes the substrate too wet. The water is used only to moisten the substrate.

LIGHTING AND UVB

The species lives underground and does not need UVB or any special lighting. An ordinary day-night rhythm in the room with 10-14 hours of light is enough. The box should not stand in direct sunlight.

Read more: Lighting and UVB

FEEDING

Earthworms are the staple food and are taken by almost all terrestrial caecilians. Use small to medium earthworms, such as compost worms, and cut them into pieces for juveniles. Put 10-15 worms in the box every other week. In a moist paper substrate the worms stay alive without rotting. The species takes a more varied diet than most terrestrial caecilians: give crickets once a month and newborn mice every 2-3 months.

The animal finds its food by smell and with its tentacles and is rarely seen eating. Dig through the substrate regularly: many worms left over mean overfeeding or an animal that is not eating. Count the worms in and out when an animal is new. The nutritional value of the worms can be increased by dusting their soil with calcium and vitamin powder 4-6 days before feeding.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Dermophis mexicanus lives hidden and spends almost all of its time buried. If the animal lies on the surface a lot, the substrate is too wet, too dry, too cold, too warm or chemically unpleasant, or there is no hide on the surface; in that case, replace the substrate and check the temperature.

One animal per box makes it easy to monitor weight and health and rules out conflict. Several animals of the same species can also be kept together if you check regularly for bites and injuries, and this gives a better chance of young. Handle the animal as little as possible and only with clean, wet hands free of cream and soap residue.

Breeding

SEXUAL MATURITY AND SEXING

The species becomes sexually mature at two to three years of age. The sexes are not easy to tell apart from the outside, and reliable external characteristics have not been described. Animals for breeding must be fully grown and in good condition, especially the females, which carry the young for 11 months.

MATING

Fertilisation is internal: the male everts the rear part of the cloaca and inserts it into the female's cloaca. The males produce sperm for most of the year, but the females in a population are pregnant at the same time, so the breeding season is short and shared. How the animals find each other and what triggers mating is not known, and breeding in captivity has not been described.

EGGS AND LARVAE

Dermophis mexicanus does not lay eggs. The foetuses develop in the female's oviducts and live only on the yolk for the first three months or so. After that they scrape the wall of the oviduct with special foetal teeth and feed on a nutritious secretion from glands in the wall. The foetuses have large, three-part gills.

Gestation lasts 11 months. The female gives birth to 3-16 young when the rainy season begins in May-June. She needs plenty of food and peace throughout the period. There is no parental care after birth.

METAMORPHOSIS

There are no larvae and no metamorphosis. The young are born fully developed and 10-15 cm long, even though the mother is only 30-45 cm. The foetal teeth fall out at birth, and the adult teeth come in within a few days.

Read more: Rearing tadpoles

REARING THE YOUNG

Newborn young need a box with a deep, moist substrate like the adults and are fed small earthworms or pieces of worm. Keep them moist and stable, and weigh them regularly. Rearing in captivity has not been described in detail.

Health and common mistakes

Illness is noticed late in an animal that lives buried. The most important problems are:

- The animal lies on the surface: wrong moisture, temperature or substrate, or a missing hide. Correct the conditions.
- Plug in the gut: coconut fibre can compact in the gut, and this can be fatal. Use paper fibre or sterile soil.
- Skin problems: fungal and bacterial infections, often after a dirty substrate or injuries. Requires a vet.
- Parasites: roundworms, tapeworms and single-celled parasites are common in caecilians in captivity. Have a faecal sample examined.
- Escape: the animal gets out through small gaps and dries out. Use a tight lid with a weight.

The chytrid fungus *Batrachochytrium dendrobatidis* (Bd) occurs in caecilians. New animals are quarantined and tested, and equipment and hands are washed between boxes. Keep a new animal in a small box for the first month, where you can count worms in and out and see whether it is eating. See a vet with experience of amphibians if the animal does not eat for several weeks, loses weight, develops sores or stays on the surface.

Read more: Quarantine and hygiene

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.