

# *Microlophus albemarlensis* (Baur, 1890) or Galápagos lava lizard: keeping and breeding at BION Terrarium Center

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## DESCRIPTION, DISTRIBUTION AND BIOLOGY



*Microlophus albemarlensis* also known as Galápagos lava lizard or Albemarle lava lizard, is endemic to the Galápagos Islands, where it occurs on several islands in the western archipelago: Isabela, Fernandina, Santiago, Santa Cruz and Santa Fe, Seymour, Baltra, Daphne Major, Plaza Sur and Rábida. Of all *Microlophus* species, this one is the most widespread

while other species inhabit single islands (Swash et al., 2005). Some authors however, consider populations on Santiago, Santa Cruz, and Santa Fe (and associated small islands) to be distinct species (*M. jacobi*, *M. indefatigabilis* and *M. barringtonensis*, respectively). The species is commonly attributed to the genus *Microlophus* but has been historically placed in the genus *Tropidurus* (Benavides et al., 2009).

Males are easy to sex being around 5-6 months old. They usually have dark bodies with yellow-green markings, spinal crests of keeled scales, considerably bigger heads and well seen black pattern on the throat. Females are reddish brown in color without markings. Females also have red or orange cheek patches when they reach maturity during breeding seasons. Cheeks become brighter and more saturated during breeding season and gestation. Like most other lizards, both



sexes exhibit changes in color depending on mood. Coloration also depends on where the lizards live. Those that live on dark lava are usually darker than those that live on light sandy land. Males are generally 2 to 3 times larger than females. Adult males have total length ranging from 22 - 25 cm (8.66 – 9.84 in) while females range from 17 - 20 cm (6.69 – 7.87 in) (Jackson, 1985; Stebbins, et al., 1967).



*M. albemarlensis* inhabits neotropical biogeographic region's lowland dry zones with loose soil and dry leaf litter where the lizards are able to bury at night. They also prefer rocky areas to hide underneath stones, rocks and inside crevices to escape from predators or too hot sun. Their habitat is characterized by such flora as cacti and vineplants,

which provide shelter from the sun and attract insects (Stebbins, et al., 1967). In general, lizards appear when the sun rises (as early as 6am). Some lizards may start to forage immediately. The activity of the lizards increases by mid-morning when the ground starts to heat up rapidly. However, by mid-day, when the temperature rises beyond tolerable limits, they retreat from exposed positions to seek shelter under rocks, leaf litter or plants. These lizards do not

communicate using any form of vocal communication. Most of their communication is through visual display because vision is their best-developed sense. "Push up" displays are used to ward off intruders as well as courtship communication. Change of skin color can communicate the mood of the lizard from fear to aggression. Other actions are used indicate the intentions of individuals. For example, females are known to turn their back to males, raise their tail and shake it from side to side as a sign of rejection to approaching males. It is also believed that females use odors to dissuade male lizards during breeding season. (Stebbins, et al., 1967; Carpenter, 1977)

## **KEEPING AT BION TERRARIUM CENTER**

### **ADULTS**

Breeding stock of 6 juveniles (later 3:3) was officially imported from the Netherlands in 2017.

**Keeping.** We keep adult Galapagos lava lizards in horizontal terrariums that should be long enough to provide temperature gradient. We use terrariums of 140\*40\*40 cm (55 \*16\*16 in) for 1 pair (1:1). We use 2-4 cm (0.79-1.57 in) layer of coarse sand as a substrate. Decoration includes several ceramic shelters, flat stones, snags and sticks. We keep them in pairs since animals of the same sex demonstrate aggression towards each other.



**Lighting.** Simple incandescent lamps (40-60 W) are used for day lighting (12-14 hours). We use them for making basking place. UV-light is necessary.

**Temperature.** Ambient temperature should not exceed +24 - +26 °C at daytime and not be lower than +22 °C at nighttime. At basking place temperature is about +35 °C. A flat stone is placed under the basking lamp.



**Humidity.** Humidity level is 50-60% with light spraying of warm corner every day.

**Water.** Water bowl is obligatory.

**Diet.** 80% of their diet consists of insects: crickets (*Gryllus assimilis*, *Gryllus bimaculatus*, *Gryllus locorojo*) and cockroaches (*Shelfordella tartara*). Other part of a diet is a finely chopped salad. In summer it is made of dandelions, nettle, hemp, wormwood, alfalfa, coltsfoot, knotweed, clover, flowers of acacia, roses, hibiscus, mallow, linden, and echinacea. In other seasons the salad is made of lettuce, Chinese cabbage, dill, cilantro, parsley, sprouts, basil, carrots (finely grated), arugula, celery (root and leaves), spinach, broccoli, cauliflower and young bean leaves. It is necessary to add dried ingredients from summer salad set. Each time we give as many variable ingredients as possible. Food (both insects and herbs) is offered every other day. We offer "Repashy" calcium-vitamin supplements for every feeding. Dry food remnants are removed from the terrarium.

## **BREEDING AND RAISING AT BION TERRARIUM CENTER**

Our *M. albemarlensis* gain sexual maturity at age of 10-12 months. It's better to let females breed later to avoid infertile eggs. Wintering per se is not required. Breeding is stimulated by changing the length of daylight. We smoothly lower the daylight hours from 14 to 6 hours for 1-1,5 hours a week. We keep it like this for at least 2-3 weeks. After that we similarly

back up the duration of daylight. After such “wintering” we increase spraying sessions, but not over moisture the terrarium.



Gestation lasts about 3 months according to literature resources (Prieto et al., 1976). Females lay a clutch in a nest deep in the sand. Number of clutches per breeding season: 2–3 (1–4 eggs (length = 2 cm (0.78 in), width = 1 cm (0.39 in) in each). If the female is gravid, it is necessary to moisturize the substrate under a flat stone a little more to create a potential place for eggs’ laying in the middle part of the terrarium. It is very important to visually check the female’s state. Female starts actively digging holes in the

sand 3-4 days prior eggs’ laying. If she rapidly became thin then we carefully start looking for eggs. Incubation period is about 90 days. Incubation temperature is +28 °C. Substrate for incubation: vermiculite. Humidity during incubation is 75–85%. Average hatchlings’ weight is about 1,4 g, total length - about 8,4 cm (3.3 in). Newly hatched babies burrow into vermiculite. Therefore, before removing them and placing them in a terrarium for babies, a closed incubation container should be placed in a large box with high sides, since babies are very fast and can escape at the first opportunity. Then with the use of a plastic glass it’s better to move a baby to the terrarium of 40\*60 cm (15.7 – 23.6 in). We keep hatchlings separately as they tend to be aggressive.



Diet for juveniles consists of the same ingredients in same rate as for adults. We offer “Repashy” calcium-vitamin supplements for every feeding. Juveniles are fed daily. Other keeping requirements for juveniles are identical to those for adults.

Galapagos lava lizards are endemic to Galapagos islands. They are still rare in herpetoculture and are always in good demand. BION Terrarium Center is one of not many breeding centers that can officially sell captive bred individuals them on the world’s pet market with all required supporting documentation. Taking into account the fact that we’ve organized stable breeding of these lizards for the past 3 years (including also F2 individuals) and we have a written methodic for keeping and breeding of them in captivity, *M. albemarlensis* can be named a good example of responsible herpetoculture as our captive breeding methods can be used to restore and support populations in the wild if necessary.



## Literature

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