

# Keeping of armadillo girdled lizard (*Ouroborus cataphractus* (F. Boie, 1828)) at BION Terrarium Center

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Armadillo girdled lizard (*Ouroborus cataphractus* (F. Boie, 1828)) is a medium-sized lizard that is found along the west coast of South Africa, from Little Namaqualand, Northern Cape Province (Orange river basin) to the Piketberg Mountains in the south, and up to Matjiesfontein in the western Karoo river basin (Fig. 1) ([https://animaldiversity.org/accounts/Cordylus\\_cataphractus/](https://animaldiversity.org/accounts/Cordylus_cataphractus/)). Its common name is connected with specific defensive position that the lizard uses for self-defense. If being under attack it bites its own tail making a so-called “ring” of its own body.



**Figure 1.** Natural distribution of *O. cataphractus* (GBIF.org (17 May 2022) GBIF Occurrence Download <https://doi.org/10.15468/dl.hkepnk>)

In such position, the lizard is able to defend itself with its spikes more effectively and escape down a slope by rolling. In such position, the lizard resembles mythical Ouroboros (snake from Scandinavian mythology) and the mammalian armadillo. These visual

similarities gave it its taxonomic and English common names. This position protects the soft lizard's belly, as its most vulnerable area.

This species, until 2011 formerly known as *Cordylus cataphractus*, is endemic to deserted areas of South Africa (Succulent Karoo biome in the Northern and the Western Cape provinces of South Africa), where it can usually be found among rock crevices, stone outcrops, mountain slopes, stony cracks and hills ([https://en.wikipedia.org/wiki/Armadillo\\_girdled\\_lizard](https://en.wikipedia.org/wiki/Armadillo_girdled_lizard)). There they can easily hide between the elements of micro landscape and sparse shrub vegetation.



**Figure 2.** *O. cataphractus* female.

*O. cataphractus* are diurnal reptiles that live in social groups. Sometimes such groups consisting of several males and females can have up to 60 individuals. However more typical number is 3-6 individuals (1 male, his harem and juveniles). Intragroup communication signals include head bobbing, tongue flicking and tail wagging (Visagie et al., 2005; le Fras N. Mouton, 2011; Shuttleworth et al., 2013; le Fras N. Mouton et al., 2014). "It has been shown that groups are not necessarily composed exclusively of family units and inter-group movement is high. In fact, some females, males and juveniles can move from group to group. This movement occurs both during, and outside of, the mating season. Males are territorial. In groups with multiple males, space is partitioned among them. Although there is some aggression between males in a group, it is much lower than the aggression shown to an outside male. Females and juveniles do not have established territories. Males defend areas that include more than one female. Females move between different territories, mating with multiple males" ([https://animaldiversity.org/accounts/Cordylus\\_cataphractus/](https://animaldiversity.org/accounts/Cordylus_cataphractus/); Reissig, 2014).

Size of adult individuals can range from 7,53 to 10,50 cm (3.0-4.1 in) in snout-vent length (SVL) (<https://studbooks.eu/studbooks/studbooks/ouroborus-cataphractus/>). Total length can reach up to 20,15 cm (8.05 in). Coloration of the body is rather homogenous being light brown (sometimes yellowish) to dark brown (Fig. 2). Ventral part of the body is yellow with a blackish pattern, especially under the chin (<https://studbooks.eu/studbooks/studbooks/ouroborus-cataphractus/>). Rows of spiny scales cover the neck, body, tail, and limbs. Such scalation in combination with behavioral peculiarities prevents many potential predators from seizing or swallowing these lizards. Males are slightly larger than females, with broader heads and have more prominent femoral pores. If pressed gently hemipeneses of males will appear at the tail base, but only a skillful and experienced keeper or a vet should do this. An X-ray examination is another option to tell sex. Head and tail are flattened, allowing it to squeeze into rock crevices. Jaws are very strong, tongue is darkly pigmented. Limbs are of moderate length, digits - unreduced. *O. cataphractus* can drop their own tail when in danger (autotomy), and can grow it back, but very slowly. However, in captivity it is better not to scare them to prevent from biting their own tails in defensive pose (Reissig, 2014). The spikes of the tail can damage the lizard's throat and inner area of the mouth causing subsequent health problems – mainly stomatitis.



**Figure 3.** Terrarium for a group of *O. cataphractus*.

These lizards are omnivorous. The fact that they feed on insects proves their role in controlling insect populations, therefore making them useful for agriculture.

*O. cataphractus* is listed in IUCN Red List with an “LC” label – “Least Concern”. Previously this species had “VU” (Vulnerable) status due to smuggling. But after the import had been restricted and *O. cataphractus* was included in CITES (II) – the population

recovered and its IUCN status was changed accordingly. *O. cataphractus* is listed as "vulnerable" in the Red Data Book of South Africa and is protected by law (Bates ye фдюб 2014).

### **Keeping and breeding requirements**

**Terrarium.** As the matter of fact we keep and breed Armadillo girdled lizard since 2000. Starting 2015, we keep our animals in well-harmonized pairs or groups. These groups are quite complicated to form and can take time. A group could include a pair (1.1), a trio (1.2) or several males and female (1.3; 2.3). During the formation of the group, you need to be very careful, since the group, regardless of gender, may not accept one, two or three individuals (recessive individuals are not let out of shelter by dominant, they are not allowed to eat or drink water. Such individuals should be immediately removed from the group and tried to enter into another group We use horizontal terrariums of 90\*50\*50 cm (35.43\*19.68\*19.68 in) per group (1:3) or (1:2) If more shelters are offered and the size of the terrarium allows - the group can be enlarged. A large number of shelters (shards, flat stones of the "torn stone" type, from which shelters are formed like a pyramid) is strongly recommended. The shelters should be formed tightly to prevent falling of shelter elements that can make damage or even kill the animals. Armadillo lizards have a habit of hiding in cracks, so the shelter should be moderately cramped. The rocks for basking places are needed. Water dish with fresh, regularly changeable water shall be always present inside the terrarium. Thermometer for temperature control is optional. Well-packed clay layer of 2-3 cm (0.78-1.18 in) is used as a substrate (Fig. 3).



**Figure 4.** A set for wintering box for a group (1.2) of *O. cataphractus*.

**Lighting.** We provide a 12-hours lighting period during breeding season 7:00 am to 9:00 pm (14 hours from March to December), UV lamp (Zoomed 10.0) or fluorescent lamp. Above the basking point, a 40W incandescent lamp is placed. If possible, we use a LED daylight lamp for more intense lighting.

**Temperature.** At daytime temperature is +26 - +28 °C (78.8-82.4 F), at night - +22 - +24 °C (71.6-75.2 F), at basking point it is about +35 - +38 °C (95.0-100.4 F). These lizards do not like too much heat so the basking spot should be situated at one corner of the terrarium. The opposite side should provide cooler ambient temperature, providing necessary gradient, where the animals can choose the most comfortable temperature conditions. Basking usually takes place in the first part of the day, while the rest of the daytime they spend under the shelters.



**Figure 5.** Registered copulations in some of our breeding groups of *O. cataphractus*: left – 2021; right - 2022.

**Humidity.** Humidity is 50-60% with two sessions of light spraying in the morning and evening.

**Diet.** The main rule: the diet should be as varied as possible. *O. cataphractus* is the only species of the genus that also feeds on plant food (Cooper, 2005). Living food items include house cricket (*Acheta domesticus*), banana cricket (*Gryllus locorojo*), bimaculatus cricket (*Gryllus bimaculatus*), Turkestan cockroaches (*Shelfordella tartara*), occasionally freshly shed zophobas (*Zophobas morio*), wax moth larvae, but moderately, as this is a very fatty food.

Salad mix includes dandelions, nettle, hemp, coltsfoot, wormwood, alfalfa, knotweed, clover, as well as flowers of acacia, roses, blackberry, hibiscus, mallow, linden, aspen, and echinacea (spring-autumn period). Dried food remnants must be removed. Animals do not

eat dry food residues. In other period (not counting winter dormancy) the salad consists of lettuce, Chinese cabbage, dill, parsley, sprouted mung beans, basil, carrots (finely grated), arugula, celery (root and leaves), spinach, cilantro, broccoli and cauliflower, young bean leaves, etc. All ingredients should be finely chopped. During winter dormancy (2,5 months the lizards don't receive food at all). Insects are given 1 time in 3 days at the rate of 5-7 pieces per individual. Salad is offered every other day. Food is offered daily if we talk about babies.

All insects should be gut loaded prior to the feeding. All food items (insects and salad are dusted with vitamin-mineral supplementation (Ca with or without D3 depending on the presence of UV lighting). Sometimes we add bee pollen to the salad.

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