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LACERTIDS

Broadley's Rough-scaled Plated Lizard

Broadleysaurus major

Broadleysaurus major is a stout, armoured lizard from the savannas and rocky country of Africa, with thick, keeled scales in transverse bands, a blunt snout and a tail that makes up less than half of the total length. It is diurnal and inquisitive, but dislikes handling. It needs a large enclosure with deep burrowing substrate, warm basking spots, UVB and a diet of insects, plants and a little fruit.

Family: Gerrhosauridae Former name: *Gerrhosaurus major*

KEY FACTS

THE ANIMAL

Adult size	**30-60 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day**
Lifestyle	**Rock-dwelling, terrestrial and burrowing**
Habitat	**Savanna and rocky terrain**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 60 cm** L × W × H for 1 adult
Temperature, day	**23-26 °C**
Basking spot	**40-46 °C**
Temperature, night	**15-22 °C**
Humidity	**40-60%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, fruit and plants**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**2-3 eggs**
Incubation	**110-145 days** at 28-30 °C

PROTECTION AND PAPERWORK

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

About the species

Broadleysaurus major is a heavily built lizard with a long, powerful body, a short head, a blunt and rounded snout, short legs and a long tail. The head, back, legs and tail are covered in thick, matt, rectangular scales with keels, arranged in transverse rows. The head shields are fused to the skull. The belly scales are smooth and pale. Between the dorsal and ventral scales lies a lateral fold of smaller, soft scales, which lets the animal expand and contract its body. This gives the species an armour-like appearance.

The colour varies from golden brown through greyish brown to dark brown, often with cream-coloured spots or narrow yellow stripes and a pale underside. Some animals are largely unpatterned. Juveniles are darker than adults and have more distinct spots, which may fade with age. Males are usually slightly larger than females and may develop a strongly coloured throat in the breeding season.

Adults are most often 30-35 cm including the tail, and the largest reach 50-60 cm. The tail makes up less than half of the total length, and the length from snout to vent is at most about 25 cm.

The species was described in 1851 by Duméril as *Gerrhosaurus major* and has since 2013 been placed in the genus *Broadleysaurus*, which is named after the herpetologist Donald Broadley. *B. major* is today the only species in the genus. Several subspecies have been described, including *B. m. bottegoi* from north-eastern Africa, but they are hard to tell apart and may be merely local colour forms. The name *Gerrhosaurus major* is still used in the hobby.

It is an active, inquisitive and food-driven lizard, but also nervous and highly strung. Some animals become so calm that they can be picked up, while others remain shy. The species is therefore best as an animal to watch and not one for daily handling.

Distribution and habitat

Broadleysaurus major lives across large parts of eastern and central Africa, with scattered populations to the west. It is found in Kenya, Tanzania (including Zanzibar), Mozambique, Malawi, Zambia, Ethiopia, Eritrea, Somalia, Djibouti, Uganda, South Sudan, the Central African Republic and northern Congo, and southwards in Zimbabwe, Botswana, Eswatini and eastern South Africa. In the west it is known from Cameroon, Nigeria, Benin, Togo and Ghana.

The species was described from Zanzibar. The range is patchy, and the populations in West Africa lie far from the main area in the east.

> **Native range:** Kenya, Tanzania, Mozambique, Malawi, Zambia, Ethiopia, Eritrea, Djibouti, Togo, Congo - Kinshasa, South Africa, Eswatini, Botswana, Zimbabwe, South Sudan, Central African Republic, Somalia, Uganda, Cameroon, Nigeria, Benin and Ghana.

HABITAT

The species lives on rocky, semi-open terrain in coastal forest, scrub, moist savanna and dry savanna, from sea level up to about 1,700 m. It is most often seen near hills, termite mounds, stone piles and rock crevices. It basks in the morning, before the sun is at its highest, and takes shelter in rock crevices, termite mounds and animal burrows, or in burrows it digs itself, when the day is at its hottest. It ranges over large areas daily in search of food and climbs low in trees, occasionally up to three metres high.

The climate is tropical savanna, with long dry seasons and short rainy seasons, in large parts of the range two a year. The mean temperature rarely rises much above 33 °C in the hottest months and stays above 18 °C even in the cool season. Relative humidity averages 40-60%, even in the dry season.

In the wild the soil is sandy and nutrient-poor. The diet is insects, spiders, small vertebrates and plants, especially fruit. Large African snails are also eaten.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

An adult needs an enclosure of at least 120 × 60 × 60 cm (length × width × height). Bigger is better, because the species is very active and covers large areas in the wild. Floor area is the most important, but the animal climbs low and uses height if there are branches and rocks to climb on. Juveniles can live in an adult-sized enclosure from the start if there are plenty of hides. The animal must be kept singly: several animals in the same space cause stress and can end in fights with serious injuries or death. Do not keep it with other species either, such as bearded dragons, because they each have their own habitat and requirements.

The substrate should be sandy and suitable for digging: a mixture of 50% play sand, 30% garden soil without fertiliser and 20% fine clay holds the burrows and provides a natural base. The layer should be at least 10 cm deep, ideally up to a third of the height of the enclosure, so the animal can dig. Avoid calcium sand, nutshell, coconut fibre and reptile carpet. Newspaper or kitchen paper can be used briefly in quarantine.

Furnish with hides that are big enough for the whole animal but small enough for it to sit snugly, and with pieces of cork, flat stones and branches. Flat stones such as slate make good basking spots. Fix stones firmly with silicone so they cannot slip and crush the animal. Avoid pine and cedar branches. Live, non-toxic plants such as aloe, haworthia, jade plant and opuntia can be included together with a layer of leaf litter. The animal often chooses a fixed toilet spot, which makes cleaning easy. Clean out droppings and soiled substrate daily, and replace the substrate completely every few months. The lid must be secure, and a front opening is easier on the animal, because a hand from above resembles a bird of prey.

Read more: Calcium, vitamins and supplements Read more: Quarantine and hygiene

TEMPERATURE

The basking spot should have a surface temperature of 40-46 °C, measured with an infrared thermometer. The cool end is 23-26 °C, and at night the temperature falls to 15-22 °C. The heat is switched on and off together with the light, so the temperature falls naturally at night. A light-free heat source such as a ceramic heater is only necessary if the night temperature falls below 15 °C.

Use halogen or incandescent bulbs for flood lighting, and fit at least two side by side over the basking spot so the whole body is warmed evenly. A bulb of 90-100 W halogen or 150 W spot is suitable when the basking spot is 20-30 cm below the bulb, but the right strength depends on room temperature, height and bulb, so experiment. Heat mats and ceramic heaters are poor for the basking spot. Measure the surface with an infrared thermometer and the air with a digital thermometer at the warm end, because air that is too hot can cause heatstroke if the animal cannot get away.

The cool night matches the tropical climate of its homeland and is good for the animal's sleep.

Read more: Heat and temperature

HUMIDITY AND WATER

Relative humidity in the enclosure is 40-60%, but the enclosure should have a dry area of 20-40% and a humid area of 50-80%. The air should be relatively dry, while the animal must have free access to a humid hide.

Create the humid zone by placing moist sphagnum in one of the hides at the cool end and changing it once a week or every other week. Pour water down to the bottom through a pipe set vertically in the substrate, about once a week or every other week, so that a damp layer forms at the bottom, which also makes the substrate easier to dig in. Seal the bottom of the enclosure with silicone. Mist as needed with distilled water. Measure humidity with two digital hygrometers, ideally with one at the cool end, where the air is most humid.

Always provide a medium to large dish of fresh water in the enclosure. The animal often defecates in the water dish. This is normal, but the dish must be cleaned straight away with a disinfectant and filled with fresh water. Otherwise change the water daily.

LIGHTING AND UVB

The species is diurnal and requires UVB. Without UVB the animal becomes ill. The UVB tube should be a T5 HO of 10-14%, in a fitting that covers about half the length of the enclosure, on the same side as the heat bulbs. The distance between tube and basking spot depends on the tube and mesh: with mesh between tube and animal it is typically 25-30 cm, without mesh 35-45 cm, measured from the bulb to the animal's back, so add 5-8 cm for the height of the animal. The basking spot should be the highest point of the enclosure and closest to the tube. The species belongs to Ferguson zone 3. The UV index should fall from 4-6 at the basking spot to 0 at the far end. Measure it with a UV meter. Glass and plastic block UVB, so a window gives no UVB.

In addition to UVB there must be strong daylight: a 6,500 K LED or fluorescent tube over at least three quarters of the length of the enclosure. Day length is 14 hours in summer, 10 hours in winter and 12 hours in spring and autumn. A gradual seasonal rhythm supports the animal's natural hormonal cycle. Replace the tubes according to the manufacturer's instructions, typically after a year.

Read more: Lighting and UVB

FEEDING

The species is omnivorous and lives mostly on insects, but also eats plants, flowers and fruit, and adults live on a larger proportion of plant matter. Juveniles need more energy-rich insects and small animals.

Animals under 15 cm get insects and plants daily. Animals of 15-30 cm get insects five days a week and plants daily. Animals of 30-45 cm get insects three days a week and plants four days. Adults over 45 cm get insects two days a week, plants four days and one fasting day. Give as many insects as the animal can eat in five minutes, and insects no larger than the distance between the animal's eyes. Fasting days are healthy and prevent obesity.

Give a varied diet of live insects: crickets, mealworms, dubia roaches, silkworms, black soldier fly larvae and beetles. Let the animal hunt. Waxworms, superworms, hornworms, small lizards and quail eggs are treats and are given less often than once a month. Snails are given only if they are captive-bred.

Give greens: rocket, pak choi, cabbage, mustard leaves, dandelions, spineless cactus pads and watercress. Occasionally basil, parsley, carrot, squash and sweet peas can be given. Avoid lettuce, spinach, avocado, onion, mushrooms and rhubarb. Fruit and flowers are given at most once a week: prickly pear, mango, berries, grapes, figs, papaya, hibiscus and dandelion flowers. Avoid citrus fruit. The animal prefers red and orange fruits and flowers.

Dust all insects with pure calcium without phosphorus and without D3, because the animal gets UVB. A vitamin supplement is dusted on the insects at intervals according to the manufacturer's instructions. Feed the insects a nutritious diet for 2-3 days before they are given.

Read more: Feeder animals: keeping and breeding Read more: Buying animals: captive-bred, wild-caught and transport

BEHAVIOUR AND HANDLING

B. major is active and inquisitive, but also nervous and easily frightened. Juveniles are particularly shy and defensive. The animal rarely bites, but lashes with its tail when grabbed. This is a defence against predators, and it lessens as the animal grows and gains confidence in its surroundings.

Taming takes patience. Give a new animal two weeks in peace, or until it eats regularly. Place the enclosure somewhere with foot traffic so the animal gets used to you, and use treats from tweezers: the species is strongly food-motivated and readily takes insects and coloured fruits and flowers. Use an enclosure with a front opening, because a hand from above resembles a bird of prey. Start with no more than five minutes at a time, and increase gradually to 15 minutes. Hold the animal firmly but calmly, and support all four legs and as much of the tail as possible. Do not put the animal back in the enclosure because it has left droppings on you, as it then learns to do it again. Many animals never become truly tame.

Wash hands with soap after all contact with animals, enclosure and food. The species is not social and must be kept alone.

Breeding

SEXUAL MATURITY AND SEXING

Males are usually slightly larger than females and may develop a strongly coloured throat in the breeding season. Sexing from appearance alone is uncertain. Age and size at sexual maturity are not documented. Only breed a female when she is fully grown and in good condition.

MATING

Mating behaviour in captivity is not documented. A gradual seasonal rhythm in day length, with longer days in summer and shorter in winter, may promote the hormonal cycle. The animals live singly and can become stressed by sharing an enclosure, so a male and a female should only be put together under supervision and separated if fighting occurs.

EGG-LAYING AND CLUTCHES

The female lays two to three eggs, which she buries in a moist spot. How many clutches she lays per year is not documented. The enclosure should have a deep, moist substrate so the female can dig.

INCUBATION

The incubation time is 110-145 days. The incubation temperature is not documented for the species; 28-30 °C is an estimate based on the tropical climate. The eggs are incubated in slightly moist vermiculite or perlite in a closed box with small air holes and are not turned.

Read more: Incubating eggs

REARING THE YOUNG

Newly hatched young are about 10 cm long. The young are darker than the adults, with distinct spots, and they are shy and highly strung, so they need many hides. They can live in an adult-sized enclosure from the start. Feed them small insects and plants every day and switch to the adult rhythm as they grow (see feeding). The young are very active, and live insects give exercise.

Health and common mistakes

Most problems are due to faults in the setup. Reptiles hide illness, so an animal that is lethargic or stops eating should go to a vet with experience of reptiles. The typical problems are:

- Metabolic bone disease from too little UVB and calcium. Provide UVB and dusted insects.
- Obesity from too much food and too little exercise. A fasting day a week and a large enclosure prevent it.
- Mites and internal parasites.
- Respiratory infection.
- Shedding problems and loss of the tail. The tail can be dropped when the animal is frightened or grabbed.
- Lethargy without an obvious cause.

Weigh the animal once a week and keep a record of weight, appetite, behaviour and shedding. A sudden weight loss is often the first sign of illness.

Read more: Common diseases and signs of illness

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.