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IGUANAS

Round-tailed Horned Lizard

Phrynosoma modestum

Phrynosoma modestum is one of the smallest horned lizards: a short, round, grey or brown lizard of up to 7 cm from snout to vent, living on rocky, dry terrain in the south-western USA and northern Mexico. It feeds mainly on ants, and the diet in particular makes the species extremely difficult to keep in captivity. Its care is almost undocumented.

Family: Phrynosomatidae

KEY FACTS

THE ANIMAL

Adult size	**7 cm** snout-vent length
Lifespan	**7-9 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Semi-desert and rocky terrain**
Difficulty	**Expert**

CARE

Min. enclosure	**80 × 40 × 35 cm** L × W × H for 1 adult
Temperature, day	**27-29 °C**
Basking spot	**38-42 °C**
Temperature, night	**18-22 °C**
Humidity	**20-40%**
Water	**No water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**6-19 eggs**
Clutches per year	**1-2**
Incubation	**40-61 days** at 27-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Phrynosoma modestum is a small, short, flat, round-bodied horned lizard with short legs and a small head. On the head sits a crown of horns of almost equal length. Unlike most other horned lizards, the species lacks the row of pointed scales along the sides. Nor does it flatten itself against the ground to eliminate its shadow, but draws the body together into the shape of a small stone and casts a distinct shadow, so that it looks like a round stone among other stones.

The colour follows the soil and can change, so that the animal better matches the ground and can regulate its temperature better: most animals are uniformly grey, but others are light brown, pinkish grey or pale yellow. There are often dark, shadow-like patches around the neck and groin and dark bands on the tail, which is thin and round in cross-section. The species is one of the smallest in the genus and reaches up to 7 cm from snout to vent and just under 11 cm in total.

The species name comes from Latin modestus, modest or restrained, presumably referring to the species' small size. The species was described by Charles Girard in 1852.

P. modestum is an animal for specialists. The diet is almost impossible to replicate, and there is no documented method for keeping the species long term.

Distribution and habitat

Phrynosoma modestum lives in the south-western USA, in south-eastern Arizona, New Mexico, western Texas, Oklahoma and Colorado, and in northern Mexico: Chihuahua, Coahuila, western Nuevo León, north-eastern Durango, north-eastern Zacatecas, north-western San Luis Potosí, Sonora and Aguascalientes. There is a single isolated record in western Tamaulipas. In Arizona the species lives at altitudes of 900-1800 metres.

> **Native range:** United States and Mexico.

HABITAT

The species lives in open, semi-arid terrain with sparse vegetation in the Chihuahuan Desert and the adjoining semi-desert grassland: valleys, gravelly slopes and low hills. It is found in strong sun on gravelly and rocky ground, in dry stream beds and among grass tussocks, often near colonies of harvester ants and honeypot ants.

Its food is above all ants, but it also takes termites, beetles, caterpillars and other insects. It is most active in mid-morning and on overcast days and is occasionally out at night. It regulates its body temperature effectively, but great heat limits the time it can be active. In late autumn and winter it brumates.

When threatened, it hunches its back, lowers its head and stays completely still; together with the shadow-like patches on its sides, this makes it look like a small stone. If caught, it can inflate itself with air and jab with its horns. The female lays 1-2 clutches of 6-19 eggs from May to July, and the first young emerge in July.

Care

THE ENCLOSURE

Very little is known about the care of *Phrynosoma modestum*. The care advice is therefore based on its habitat (dry, rocky terrain with strong sun) and on the closely related and better-known *Phrynosoma cornutum*. Figures borrowed from it are marked in the text. *Sceloporus undulatus* and *Sceloporus occidentalis* from the same family also have similar needs for sun and warmth, but they are far easier to keep because they eat ordinary feeders.

An adult needs an enclosure of at least 80 × 40 × 35 cm (length × width × height). The species is smaller than *P. cornutum*, and the figure is an estimate. It uses only the floor, so floor area is what matters. The substrate is 5-10 cm of loose mix of sand, soil and gravel, so that the animal can bury itself at night. Furnish the enclosure openly and simply: flat stones and a couple of pieces of wood as basking spots and lookouts, and a couple of hiding places. Fix the stones so that they cannot slip when the animal digs. The enclosure needs a tight-fitting lid, and the animal needs peace, because the species is stressed by disturbance.

Read more: Feeder animals: keeping and breeding

TEMPERATURE

The species is a sun lover and needs a basking spot where the surface reaches 38-42 °C, measured with an infrared thermometer. The rest of the enclosure should be cooler, 27-29 °C by day, so that the animal can choose for itself how long to lie in the heat. The heat lamp must be controlled by a thermostat, and the animal must not be able to touch the bulb. At night the temperature falls to 18-22 °C. These figures are borrowed from *Phrynosoma cornutum*; they have not been measured for *P. modestum*.

Both too little and too much heat are harmful. If it is too cold, the lizard eats and digests poorly. If the whole enclosure is too warm, it buries itself and does not come out. In the wild the species brumates in late autumn and winter. Temperature and duration for brumation in captivity are not documented, and brumation should only be given to healthy, well-nourished animals.

Read more: Heat and temperature Read more: Brumation and the seasons

HUMIDITY AND WATER

Humidity should be low, 20-40 %, and the enclosure should dry out completely during the day. The substrate must not be wet. The figure is borrowed from *Phrynosoma cornutum*. The species hardly drinks from a bowl. Mist lightly once or twice a day on stones, so that droplets form for the animal to lick, and let it dry away again. A fogger that runs two short times a day is a good solution.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal and spends the day in open sunlight, so it needs strong light and UVB all year. Use a UVB tube (Ferguson zone 3, T5 HO 10-14 %) or a combined UVB metal halide lamp above the basking spot. The zone is borrowed from *Phrynosoma cornutum*. Measure the UV index at the height of the animal's back, and replace the light source according to the manufacturer's instructions.

Keep the light on for about 12 hours a day, controlled by a timer. There must be a cooler, shadier place to retreat to. At night it must be dark.

Read more: Lighting and UVB

FEEDING

Food is the decisive limitation, and it is what makes the species an animal for experts. In the wild, ants are the staple food, especially harvester ants and honeypot ants, supplemented with termites, beetles and larvae. The diet cannot be replicated in an enclosure, and no documented diet keeps the species healthy over time.

Offer as many different small feeders as possible every day: fruit flies, small crickets, small mealworms and small cockroaches, dusted with a calcium supplement for ant-eaters. Offer live ants when they can be obtained. Wild ants can carry intestinal worms and may be collected only from pesticide-free places. Feeders must be small, and they should be gut-loaded with nutritious food for a day before being offered.

Weigh the animal every week. An animal that loses weight is not getting enough of the right food, and then there is little to be done. Choose only animals that already eat in captivity, and avoid newly caught animals.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Phrynosoma modestum is quiet and calm and lives alone. It makes little fuss and is easy to overlook, because it blends into the ground. It is easily stressed, and if caught it inflates itself and jabs with its horns. The species is not an animal for handling.

Keep one animal per enclosure, and put animals together only for mating, under supervision. Let new animals settle in peace, and handle them only when necessary.

Breeding

SEXUAL MATURITY AND SEXING

Age and size at sexual maturity are not documented for *Phrynosoma modestum*, and the same applies to reliable external sex characteristics. Lifespan is not documented either; the 7-9 years in the box are borrowed from *Phrynosoma cornutum*. Use only fully grown animals in good condition for breeding.

MATING

Mating is not documented in captivity. In the wild the species breeds in early summer, after brumation. How mating is triggered in an enclosure is not known, and the species can hardly be regarded as one that is bred in captivity. Put a pair together only for a short period and under supervision, and remove the male again after mating.

EGG-LAYING AND CLUTCHES

The female lays 1-2 clutches a year from May to July, each of 6-19 eggs. For egg-laying she needs a box or a corner with at least 25 cm of slightly moist sandy soil. Without a suitable place she can retain the eggs, and that can become life-threatening.

INCUBATION

Incubation time and temperature are not documented for the species; in the wild the first young emerge in July. The figures in the box, 40-61 days at 27-30 °C, are borrowed from *Phrynosoma cornutum* and *Sceloporus undulatus*. The eggs are moved carefully, without being turned, to slightly moist vermiculite or perlite, so that they neither dry out nor become wet.

Read more: Incubating eggs

REARING THE YOUNG

Rearing of young is not documented. In *Phrynosoma cornutum*, newly hatched young eat only small ants, and rearing is the hardest stage. Offer fruit flies, small ants and other small feeders daily, dusted with calcium, in a small enclosure with loose substrate, a basking spot and UVB.

Health and common mistakes

Most illnesses are caused by mistakes in food or setup. The typical problems are:

- Emaciation and starvation. If the food is not right, the lizard slowly loses weight and dies. This is the most common cause of losses, especially in wild-caught animals.
- Calcium deficiency and brittle bones (metabolic bone disease) from too little UVB and calcium. It causes soft jaws, bent legs and tremors.
- Stress from too few hiding places or too little peace.
- Intestinal worms and mites, especially in wild-caught animals. Have a faecal sample examined, and check the skin.
- Shedding problems in air that is too dry.
- Burns from unprotected heat lamps.

A healthy animal is alert, has clear eyes and a plump body. Weigh the animal regularly, because sudden weight loss is often the first sign of illness. See a vet with experience in reptiles if the animal loses weight, does not eat, is lethargic or has swellings on the jaw.

Read more: Common diseases and signs of illness Read more: Buying animals: captive-bred, wild-caught and transport

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.