



*Photo Credit: Kansas Herpetofaunal Atlas

Horned Lizards (*Phrynosoma* spp.)

Spiny and Specialized

Horned lizards are commonly known as “horny toads” or “horny frogs”, although they are not truly “toads”, “frogs”, or otherwise “amphibians”, but rather a genus of lizards. In fact, their genus name, *Phrynosoma* translates to “toad bodied”. Roughly 15 species altogether are known from the southwestern United States and Mexico. Horned lizards can be quite variable in color depending on the species and locality, and can range from blackish or grayish, to tan, brown, yellowish, olive, reddish, to pinkish. Most species have short, spiny, rotund heads and bodies resembling a toad or a frog (hence their common names). Most also have a series of distinctive spines behind their heads and necks as well. These species possess numerous spines and scales as a means of not only outward defense, but also to conserve water to remain hydrated in their arid to semi-arid environments. Horned lizards employ a very unique defensive strategy when provoked or hard pressed, which involve squirting blood from ducts in and near their eyes for distances up to 5 to 6 feet. Although the exact mechanisms for their blood squirting ability remain unknown, it has been most widely believed that this ability may be derived from their staple diet of harvester ants in the wild. They also rely upon crypsis as a means of camouflage, and their appearances can conceal them quite well to avoid detection. They will also inflate their bodies when directly threatened, making them much less easily ingested for any potential predators. Horned lizards are a very unique and specialized genera of lizards that can make for intriguing and rewarding captives provided the correct level of care and knowledge by the intermediate level or higher enthusiast.

Taxonomy

Life: All living, physical, and animate entities

Domain: Eukaryota

Kingdom: Animalia

Phylum/Sub Phylum: Chordata/Vertebrata

Class: Reptilia

Order: Squamata

Suborder: Lacertilia

Infraorder: Iguania

Family: Phrynosomatidae

Genus: *Phrynosoma*

Species: *Phrynosoma* spp.*

*Taxonomy subject to change and revision.

Lifespan and Longevity

Captive longevity of horned lizards is not fully known or understood, but they have to potential

of attaining at least 5 or more years in captivity.

Species

Commonly seen species include the Regal Horned Lizard (*P. solare*), Mexican Horned Lizard (*P. taurus*), Desert Horned Lizard (*P. platyrhinos*), Coast/Texas Horned Lizard (*P. coronatum*), and Giant Horned Lizard (*P. asio*).

Distribution and Habitat

Horned lizards are a very unusual genus of small, spiny terrestrial lizards indigenous to the western to southwestern United States, and into northern Mexico depending upon the exact species and subspecies. Within this range, horned lizards occupy primarily terrestrial environments, including dry, arid to semi-arid, rocky deserts to semi-deserts, scrublands, and dry savannahs to grasslands, open, dry forests and woodlands, where they use burrows, rocks, logs, tree trunks, downed or low vegetation and other debris on or near the ground to thermoregulate, forage, and seek refuge.

Origin/History

Phrynosoma spp. Wiegmann, 1828. Specific species and subspecies would have other authors first describing them during other years.

These unusual lizards have long been present in the pet trade, but would mostly be wild-collected and would historically and traditionally make for poor pets due to their extreme specialist diets of ants. During the 1960's and 1970's, through the 2000's, different U.S. states in which these lizards are native to would enact better laws and regulations pertaining to stemming their overcollection from the wild.

Experience Level Required

Advanced.

Size

Horned lizards are fairly small lizards that can vary somewhat in size depending on the species. Most species of horned lizards typically are from 3.5 to 8.0 inches in total snout-to-tail length. Snout-to-vent length varies depending on the exact species, but ranges from about 2.7 to 4.9 inches snout-to-vent length (SVL).

Housing and Enclosure

Enclosure System: Primarily Terrestrial. Housing must be sealed and escape proof, as well as be adequately ventilated. Horned lizards are communal, and can be kept together with members of the same species, although housing them with other species should be discouraged. A minimum of a roughly 20 gallon long, or similar sized enclosure can comfortably house one to a trio of these lizards. Horned lizards will enjoy burrowing and thus should be provided with two to four inches of a natural particulate substrate such as play sand, crushed walnut shells, or some other commercially available sands, but avoid calcium sand. Although they are not frequent climbers, horned lizards should also be provided with several additional furnishings for climbing, basking, and hiding opportunities such as log, rock, or cork bark hides, rocks, driftwood, artificial foliage, and/or other similar furnishings inside the enclosure. Also provide a sturdy, non-porous water bowl or dish they can readily enter and exit, that should be cleaned and changed at a minimum weekly or when otherwise fouled.

Temperature, Lighting, and Humidity

As with all reptiles, horned lizards are ectothermic, and should be provided with suitable basking

and thermal gradient temperatures. Horned lizards enjoy hot, dry conditions, and basking temperatures of around 110 to 115 degrees F are acceptable. The cool side, as well as overall ambient temperatures can be within 70 to 75 degrees F. Many of the commercially available overhead incandescent or mercury vapor bulbs, radiant heat panels or emitters, and/or under tank heating elements can be used to maintain horned lizards. A 12 to 14 hour light cycle can also be provided as well using a properly fitted timer, temperature gauge, or thermometer/thermostat. Overall, horned lizards will require the correct amounts of UVA/UVB lighting and heating in order to properly derive calcium and vitamin D3 Spot clean the enclosure for urates, feces, or uneaten food at least twice per week. Be sure to periodically replace the substrate, clean, and disinfect the enclosure and its furnishings at minimum every 2 to 3 months. More specific lighting, heating, and humidity product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well. Horned lizards should be provided with moderate relative humidity levels of at, or within about 60 to 70%, although this may vary somewhat on the exact species.

Feeding, Diet, and Nutrition

Insectivorous; In the wild, horned lizards most often tend to be dietary specialists, feeding largely to exclusively on harvester or carpenter ants, as well as occasionally other insects and invertebrates. At least one species, however, the Giant Horned Lizard (*P. aiso*) from Mexico, has a somewhat broader diet in the wild, which may make that species perhaps the most suitable to keep in captivity.

Feeding and diets are one of the factors which make horned lizards difficult to keep in captivity. These lizards tend to feed almost exclusively on ants in the wild, namely carpenter or harvester ants. Formic acid diet supplements are sometimes available, which are the nutritional supplements found in ants, can sometimes be used to supplement more traditional feeder insects with such as crickets; however, not all horned lizards may take to eating the crickets. Horned lizards also need a lot of ants to eat, and may eat hundreds in one sitting. Horned lizards may be fed at least 2 to 3 times weekly, but also be sure to monitor their progress to ensure they are eating and/or able to capture their food. As with any insect diet, also be sure to provide calcium and vitamin D3 supplements in horned lizard diets whenever possible. More specific dietary and supplementary product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

Handling

Horned lizards may tolerate some levels of handling, but are generally not as hardy or handleable of lizard species as some other commonly kept species are. Therefore, frequent handling should be discouraged. Generally, they do not enjoy being handled. If they are handled, it should be done so gently and deliberately, but do not drop or injure the animal. Allow the horned lizard to sit and/or walk in between or from hand to hand as a way of best handling them. Although horned lizards are well known for squinting blood from their eyes as a defensive mechanism, most will become tolerant and acclimated to at least being in captivity, and must be severely or hard pressed for them to do so. More common defensive behaviors include relying on their camouflage (crypsis), running in short bursts, and/or puffing their bodies to appear larger or more inaccessible if wedged in between a crack or crevice.

****Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens****

Contact

Authored by Eric Roscoe. For any additional questions, comments, and/or concerns regarding

this animal, group of animals, or this care sheet, please email and contact:

Eric.S.Roscoe@gmail.com

Disclaimer: Note that the information provided in these, or any care sheets, are not intended to be all-exhaustive, and further research and care should always be sought and provided when it comes to any species one may prospectively be interested in. These care sheets are also not intended to serve as substitutes for professional veterinary medical care and husbandry should any animal require it. Always seek proper and professional veterinary care for any animal should the need arise, and be prepared ahead of time for any and all husbandry costs and expenses that may occur with any animal beyond the initial purchase. Any animal owned is ultimately a matter of personal/individual care and responsibility. We cannot make any claims or guarantees regarding any information in this care sheet therein. This care sheet may be reprinted or redistributed only in its entirety.

*Copyright, 2023