



**Photo Credit: Ka Wai Hung*

Chinese Crocodile Lizard (*Shinisaurus crocodilurus*)

Miniature Crocodilian Replicas from China

The Chinese crocodile lizard is a very unique, monotypic species of medium sized lizard, meaning they are the only species currently recognized within their genus. These unique, semi-aquatic species of lizards are indigenous to the evergreen to bamboo forests and woodlands surrounding shallow ponds, pools, and other relatively pristine bodies of water from the provinces of southern China to northern Vietnam. These unique lizards spend much of their time basking and thermoregulating, as well as foraging for their smaller invertebrate to small vertebrate prey in or near these bodies of shallow water, as well as the nearby, or overhanging branches and vegetation, where they may retreat into the water, and are able to submerge themselves underwater for fairly long periods of time in order to escape threats or other potential disturbances. Chinese crocodile lizards are able to accomplish these amazing feats by drastically reducing their respiratory rates, which also assist these lizards in conserving calories and other nutrients, and as an overall adaptation for surviving in their region's sudden cooling temperature drops.

As their common names might imply, these lizards possess four dorsal rows of highly ridged osteoderms which merge with two, more sharply keeled rows of scales beginning at the bases of their tails, which bear these lizards the resemblance to crocodilians. Ground color can range from blackish to dark greenish-olive, to dark grayish-brown or greenish-brown with brighter and more vibrant reddish, reddish-orange necks, throats, and flanks in the form of flecking, and alternating bands along their bodies. Males are much more sexually dimorphic and brightly colored than females and juveniles, especially during their breeding season. Unfortunately, Chinese crocodile lizards have become listed as a worldwide endangered species due to numerous threats they are facing in the wild, including deforestation and habitat loss, increased vulnerability to predation as a result of habitat loss, and overexploitation. While the status of many, if not most populations of these lizards in the wild have decreased drastically, and are now largely uncertain due to the threats they face and their secretive and cryptic nature, the Lizard Advisory Group, along with other national and international public and private entities and agencies have sought increased protections for these unique and dwindling lizards in the wild while also working to bolster the status and captive breeding program success for this species in captivity. Much work and cooperation, however, remains to be done to establish more worldwide networks of zoo and conservation biologists and the private, intermediate to advanced reptile keeping sectors to provide better communication in ultimately furthering the numbers of these endangered lizards.

Taxonomy

Life: All living, physical, and animate entities

Domain: Eukaryota
Kingdom: Animalia
Phylum/Sub Phylum: Chordata/Vertebrata
Class: Reptilia
Order: Squamata
Family: Shinisauridae
Genus: Shinisaurus
Species: *Shinisaurus crocodilurus**
**Taxonomy subject to change and revision.*

Lifespan and Longevity

In the wild, lifespan and longevity of Chinese crocodile lizards is currently uncertain. However, in captivity, these lizards have been documented at least 10 to 15 years or potentially more under the proper care and conditions.

Distribution and Habitat

The Chinese crocodile lizard has a rather small and limited range, being found primarily in the Hunan, Guangxi, and Guizhou provinces of southern China to the Quang Ninh Province of northern Vietnam. Within this limited range, Chinese crocodile lizards inhabit the cool, evergreen to bamboo forests surrounding small, clear, and relatively pristine and high quality streams, ponds, pools, and other bodies of water, where they bask and thermoregulate, defend territories, and hunt for smaller invertebrate and vertebrate prey amongst overhanging branches and other nearby vegetation and debris.

Origin/History

Shinisaurus crocodilurus Ahl, 1930.

Because of their colorful appearance and docile nature, Chinese crocodile lizard would be a popular species for the pet trade. In the 1980's, large numbers were exported to Europe and America, further decimating already small populations. In 2008, it was estimated that only 1,000 to 2,000 individuals remained, but accurate counts are hindered by the rugged habitat and reclusive nature of the lizard.

In 1990, the Chinese crocodile lizard was listed on appendix II of CITES, which limited the numbers that could legally be exported, and since then, their wild trade has almost ceased (Sacramento Zoo). In 2017, the species was transferred to CITES Appendix I, according to its ongoing threat of extinction enhanced by poaching and trade.

Experience Level Required

Intermediate/Moderate to Advanced.

Size

As adults, Chinese crocodile lizards reach an average adult size of about 15.7 to 18.1 inches in total snout-to-tail length. Maximum snout-to-vent length (SVL) is reported to be 15.6 inches or less.

Housing and Enclosure

Enclosure System: Semi-Aquatic. Housing must be sealed and escape proof. As young lizards, Chinese crocodile lizards can be housed in a 20 gallon terrarium or enclosure, while as adults, these lizards require a minimum of a roughly 40 gallon long terrarium or enclosure. Chinese crocodile lizards are a species which seem to thrive better in more naturalistic vivariums or enclosures most closely replicating their natural microhabitats in their Chinese and Vietnamese

provinces. At least approximately one third or more of their enclosure should be custom designed to be able to accommodate a plastic or artificial basin of water at about 2 ½ to 3 inches in depth, and sufficient filters should be used to help maintain water cleanliness, aeration/oxygenation, and clarity in these unique lizard's enclosures. Dryer, or basking areas should comprise of a substrate of chemical and pesticide free garden or potting soil, dry leaf litter, peat or sphagnum moss, or coconut husk substrates which can retain some moisture and humidity well. Conversely, the entire base of the enclosure can also be utilized as a semi-aquatic setup without the additional substrate provided sufficient basking and climbing opportunities are still provided otherwise. Also be sure to provide these lizards with ample basking and hiding opportunities by providing overhanging live and/or artificial foliage, driftwood, rocks, or logs. These lizards will also climb whenever the opportunity arises, and also benefit greatly from any additional climbing opportunities provided within their enclosures as well. Water temperatures should also be maintained at around 68 to 70 degrees F, and not be able to become too warm to hot. Water temperatures should be closely monitored throughout the year, especially when ambient temperatures may be higher. While these lizards are also semi-aquatic and can spend considerable time submerged, also ensure there are no obstructions or obstacles which could impede their ability to reach the surface, as these lizards can potentially drown otherwise.

Temperature, Lighting, and Humidity

For basking, create a thermal gradient (or a warm side) in the cage/enclosure. Ideal basking/warm side temperatures for these lizards should range from about 90 to 95 degrees F, and around 68 to 75 degrees F on the cooler side/ambient enclosure temperatures. Providing the correct amounts of UVA/UVB overhead incandescent and florescent lighting, and calcium-to-phosphorus ratios is essential for ensuring the health and overall well-being of these lizards in captivity. Without UVA/UVB, or adequate amounts of it, they can be susceptible to the abnormal bone growth and development known as Metabolic Bone Disease (MBD), and other health and development maladies. Also be sure to 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. Chinese crocodile lizards require moderate to high levels of relative humidity, and should be maintained at, or near 75 to 85%.

Feeding, Diet, and Nutrition

Insectivorous to Somewhat Carnivorous; In the wild, Chinese crocodile lizards are primarily insectivorous, feeding on a variety of aquatic, to semi-aquatic or terrestrial invertebrates including snails and other mollusks, insects and insect larvae, worms, small crustaceans, and other invertebrates. These lizards may also catch and consume small vertebrates such as small fish, tadpoles, and occasionally small rodents, and other smaller vertebrates.

In captivity, Chinese crocodile lizards can be given a variety of appropriately sized feeder insects including, but not limited to crickets, roaches, mealworms, superworms, earthworms, and waxworms. They can also be given small feeder fish of appropriate size and nutritional value, or small, pre-killed rodent prey items, although only occasionally. Feeder insects should be gut-loaded in order to increase their optimal nutritional value. These lizards also require additional calcium and vitamin D3 supplementation 1 to 2 times weekly or as otherwise directed for optimal health and development. This is in order to prevent Metabolic Bone Disease (MBD) and other growth and nutritional deficiencies. Their feeding frequency will depend on the age, size, and overall health of your animal. Use care as to not overfeed them, as obesity and other health related issues can become an issue. 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

When given the sufficient time to adjust and become acclimated to their surroundings, many Chinese crocodile lizards can become quite tame and placid, and can often become excellent display and interactive animals. Some individuals, however, can be somewhat wary and jumpy, and individuals of any temperament or disposition should be handled gently and deliberately, while allowing for free movement among one's hands or arms as to not drop or otherwise not overstress or otherwise cause injury to these lizards while they are being handled. Although they are typically not aggressive lizards willing to bite, Chinese crocodile lizards also do have strong jaws and can potentially deliver a painful bite if handled carelessly or improperly.

****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

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