**Detroit Zoo.*

Axolotl *(Ambystoma mexicanum)*

A "Water Dragon" Lost in the Wild

Axolotls, which also are known by many other local common names (including water dogs, water dragons, Mexican salamanders, Mexican walking fish, and other names), are a species of paedomorphic ambystomid salamander, meaning their juvenile larvae stage features are retained as adults. These juvenile larval features can include finned tails, and their characteristic bushy red gills used for oxygen cycling and respiration. In captivity, however, or under forced circumstances, axolotls can metamorphosis in to terrestrial adult salamanders that are dark blackish to olive green with mottling in color, but tend to be fairly short lived thereafter. Axolotls are gray, blackish, brown to olive with a finned tail and large feathery gills. Albinos and other morphs are also widely available. Axolotls are very widely used model organisms in scientific and medical research including for studies in limb and digit growth and regeneration, organ development, and many other fields.

Taxonomy

Life: All living, physical, and animate entities
Domain: Eukaryota
Kingdom: Animalia
Phylum/Sub Phylum: Chordata/Vertebrata
Class: Amphibia
Order: Caudata/Urodela
Suborder: Salamandroidea
Family: Ambystomatidae
Genus: Ambystoma
Species: *Ambystoma mexicanum**
**Taxonomy subject to change and revision.*

Lifespan and Longevity

If provided the proper care in captivity, axolotls can attain longevity of 10 to 15 years or more.

Distribution and Habitat

The axolotl is an aquatic native only to lakes Xochimilco and Chalco in Mexico City, Mexico in well vegetated aquatic environments. These high altitude lakes are, or were at least historically, relatively large, permanent bodies of water, although the most recent evidence suggests that Lake

Chalco no longer remains. Axolotl populations have declined drastically due to the introduction of predatory fish which feed on the salamanders and their larvae and eggs, as well as significant habitat loss and degradation.

Origin/History

Ambystoma mexicanum (Shaw and Nodder, 1798).

Axolotls were first imported into Europe in the 1860s, after specimens were collected from Lake Xochimilco near Mexico City and brought back to the Paris Museum of Natural History. From there, they were distributed to other museums and scientific institutions, and eventually became popular in the pet trade. Today, axolotls are widely bred in captivity and are kept as pets all over the world. Specifically, in 1863, it was French scientist Auguste Duméril who would first import them.

Experience Level Required

Novice/Beginner to Intermediate/Moderate.

Size

Axolotls are fairly large salamanders that can typically reach up to 8 to 12 inches in total snout-to-tail length. Maximum snout to vent length is about 4.5 inches (SVL).

Housing and Enclosure

Enclosure System: Primarily Aquatic. Housing must be sealed and escape proof with a secured lid or aquarium hood. Axolotls are fully aquatic and never use dry land. Axolotls require a minimum of a 10 to 20 gallon aquarium depending upon the number of animals housed. Use a quality canister filter and conditioner to help maintain cleanliness inside the aquarium but use an outlet. Axolotls do not tolerate distinct water flow as many fish do. Allow aquarium to cycle for at least 2 to 3 weeks prior to introduction of the axolotl. Provide caves, plants, logs, or other furnishings for added security and hiding opportunities. Substrate is not required, but larger pebbles that cannot be swallowed, or aquarium sand can be used safely with axolotls. If keeping multiple axolotls within a single tank, provide adequate space and food to prevent them from nipping one another. Do not keep fish with axolotls, as very small fish may be eaten by them or they may be eaten by larger fish. More rarely, some axolotls may spontaneously metamorphose into the terrestrial adult form, but these tend to be short-lived in their longevity.

Temperature, Lighting, and Humidity

Axolotls have simple and undemanding heating and lighting requirements in captivity, and do not require additional UVA/UVB lighting, although providing it in moderated amounts can be greatly beneficial for their health, immune system, and overall wellness. They otherwise do not require any other special lighting or heating unless live plants are also maintained, although water temperatures should be maintained at around 65 to 75 degrees F. Do not exceed 75 degrees F for prolonged periods of time when maintaining axolotls. For any supplemental heating that may be needed, use a low wattage incandescent or UVA/UVB bulb, radiant or ceramic heat emitter, submersible water heater, or UTH (under tank heating element).They are susceptible to health and husbandry related issues if water temperatures are too cold or too warm for these unusual amphibians. 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. Humidity is not applicable for primarily aquatic axolotls, although terrestrial forms should be kept at relatively high humidity of at least 70 to 80%.

Feeding, Diet, and Nutrition

Primarily Insectivorous to Carnivorous; Axolotls are largely carnivorous and opportunistic feeders in the wild, feeding on small fish and fish eggs, a wide variety of insects, arthropods, worms, crustaceans, and other invertebrates. In captivity, axolotls can be easily fed, and can readily be given chopped chemical and pesticide free nightcrawlers, earthworms, redworms, isopods, feeder crickets, roaches, waxworms, and mealworms at least two to three times weekly, with this being their recommended feeding frequency. Any feeder insects should also be gut loaded and dusted with additional calcium and vitamin D3 supplements as well prior to feeding to ensure optimal nutrition and health. Some commercially available fish and aquatic turtle diets can also be given. 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

Axolotls are very delicate, soft bodied amphibians that are nearly comprised entirely of cartilage rather than true bone. All amphibians breathe and respire through their skin, as well as absorb water through this means. It is therefore important to avoid wearing any chemicals or lotions on your hands, which can be potentially harmful or even fatal to amphibians. It is also important to wash or rinse hands thoroughly, and ensure they are adequately moistened before and after handling any amphibians in order to prevent them from drying out. Handling axolotls should be minimized whenever possible and only when absolutely necessary. Use a fine mesh net to move capture and move axolotls and to avoid injuring them.
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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