

Extreme Cool Fish

Bonus content for the January 2009 AFI magazine article "The 'Coolest' Tropical Fish."

By Oliver Lucanus

South America is not all tropical forests. With the exception of the Guyanas and Brazil, each country has mountains higher than 6,500 feet in elevation, many with permanent glaciers, snow cover and true alpine environments. Fish also occur here, often up to 13,000 feet above sea level. Many of the most extreme cold water fish of South America would make interesting aquarium fish, but their transport alone would be difficult to manage. To survive in the aquarium, many of these fish would require high oxygen levels and a chiller to keep the water cold enough.

Orestias. The famous Lake Titicaca in the Bolivian Altiplano region is one example of the fragility of extreme habitats. At the beginning of the 1900s, 23 species of Orestias thrived in the lake. (Oddly enough these small fish are related to the desert pupfish of the United States, which are in similar dire straits.) In 1937, the US Fish and Wildlife Service (USFW) introduced the lake trout (*Salvelinus namaycush*) into Lake Titicaca. Within 15 years, most of 23 species of Orestias were extinct, including the impressive *O. cuvieri*, a predatory species growing up to 10 inches in length. Today, only two of the Orestias species have remained in Lake Titicaca. They are now bred in large numbers by a Bolivian government program trying to save the last of the species.

The lake is more than 12,000 feet above sea level, an altitude at which the many other Orestias species found in the Bolivian, Peruvian, Chilean and Equadorian Andes are at home. I recently collected *O. luteus* at 12,500 feet altitude in water with a temperature of 32 degrees Fahrenheit water. In the aquarium, Orestias are easy to keep like other pupfish, but their extreme temperature requirements make them impossible to maintain over the summer without the help of a chiller. As adults, most Orestias species reach 4 to 6 inches.

Rubbernose plecos (*Chaetosoma*). Rubbernose plecos of the genus *Chaetostoma* are known to many aquarists; but many species of these algae-eating catfish can live in extreme altitudes of up to 10,000 feet above sea level in the Andes. They live in alpine rivers with fast-flowing water, often near rapids or waterfalls. This habitat is shared with a very strange group of catfish of the genus *Astroblepus*. More than 50 species of *Astroblepus* have been described to date, but only a handful of specimens has ever been kept in the aquarium. Provided the water is cool enough, and an extreme current and several airstones provide enough dissolved oxygen, they are hardy catfish that spend the day clinging to rocks in the strongest current. To my surprise, mine ate just about any food offered and quickly learned to take food directly from my hands. Besides their strange shape and extreme habitats, these torrent catfish are not difficult to maintain in the aquarium, provided the temperature does not exceed 70 degrees. With temperatures above 70 degrees, the animals become susceptible to bacterial disease, which quickly kills them. Most *Astroblepus* species grow from 3 to 6 inches in total length.

Patagonian brass tetra (*Gymnocharacinus bergi*). This tetra occurs in Argentina, only in a thermal spring (Rio Valcheta), which despite its alpine location, always has the same temperature of 72 degrees Fahrenheit. The sensitive and nervous characins quickly die if the temperature exceeds 72 degrees or falls below 70. Their maximum size is only 2 inches. This species is among the most extreme cool fish for a familiar and sad reason: Because of the introduction of trout in its natural habitat, the species is nearly extinct. In the 1990s, there were less than 250 Patagonian brass tetras remaining in the wild.

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