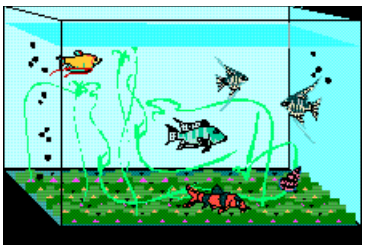


Informații despre acvariu

în 99 de pagini, actualizat la 28. mai. 2011

Cuprins

Animalia. Arthropoda. Crustacea. Palaemonidae

Family description

Scientific classification

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Infraorder: Caridea
Superfamily: Palaemonoidea
Family: Palaemonidae

Palaemonidae is a family of crustaceans of the order Decapoda. They belong to the infraorder Caridea, which contains the true shrimp; while some freshwater palaemonid species are known as "prawns", the family belongs to the suborder Pleocyemata like all true shrimp, whereas the true prawns are members of the suborder Dendrobranchiata.

Two subfamilies are distinguished: the Palaemoninae are less diverse phylogenetically, but more diverse ecologically. They are mainly carnivores that eat small invertebrates and can be found in any aquatic habitat except the deep sea. The most significant palaemonine genus is Macrobrachium, which contains commercial species such as Macrobrachium rosenbergii.

The Pontoniinae have a higher evolutionary diversity, but almost all of them inhabit coral reefs, where they associate with certain invertebrates such as sponges, cnidarians, mollusks and echinoderms. This group includes cleaner shrimps as well as parasites and commensals. They generally feed on detritus, though some are carnivores and hunt tiny animals.

Genera

The family contains 134 genera, divided unevenly between two subfamilies:[1]

1. Palaemoninae Rafinesque, 1815
2. Pontoniinae Kingsley, 1879

Palaemonetes spp. Ghost Shrimp

Species Profile and Care Information

Freshwater Invertebrate
Scientific Name : Palaemonetes sp.
Common Names : Glass Shrimp, Grass Shrimp
Care Level : Easy
Size : 1 - 2 inches (3 - 5 cm)
Life span : 1 - 2 years, sometimes longer

pH : 6.5 - 8
Temperature : 65°F - 80°F (18°C - 27°C)
Origin / Habitat : Found in multiple places throughout North America, mostly farm raised for the pet fish trade

Overview

The Ghost Shrimp is a cool little freshwater shrimp that you may be interested in keeping if you have the right tank setup. They are sometimes called the "Glass Shrimp" because they have a semi-translucent body. This is a very inexpensive shrimp to purchase and should live for a year or two and sometimes even longer.

They are frequently used by fishermen as fish bait and they are considered pests by clam farmers who spend lots of money trying to eradicate them from their clam farms. For hobbyists, they can provide an interesting addition to a tank stocked with smaller, less aggressive fish species. Larger fish may find them irresistible and will just love eating them.

Ghost Shrimp need to build a borrow to feel secure so you will need to provide a sand or very small sized gravel substrate that will allow them to create a shelter for themselves. You may be able to keep multiples provided that you have a tank large enough to support multiples. You may see some aggressive behavior amongst them around breeding time.

This is a somewhat decent scavenger and will go after all fish foods placed into the tank. Make sure they are getting enough to eat by dropping in a sinking shrimp pellet or algae wafer every once in a while.

If you have your ghosties in a tank with fishes that need treatment for diseases you will need to remove the shrimps to a separate tank while medicating. Beware especially of any medications containing copper. Run activated carbon through the aquarium filter and make sure you remove all of the medications before introducing them back into the tank.

Temperament / Behavior : Sometimes will eat baby fish, they are usually food for other fish, sometimes will fight among themselves if the tank is too small and there are too many of them.

Breeding / Mating / Reproduction : If you put several of them in your tank then they will mate and the female will carry small eggs in her belly which you can see. Happens without you doing anything. If you want to raise the young then you need to move the female to a separate tank before she has her babies and add the appropriate amount of aquarium salt.

Tank Size : 5 gallons (19 liters)

Compatible Tank Mates : Use caution when selecting tank mates if you want to keep them. Larger fish may find them irresistible and eat them. Smaller, peaceful fish species may be able to co-exist with them.

Fish Disease : Freshwater Fish Disease

They are not very susceptible to disease but are susceptible to chemicals that treat fish diseases. Look for warnings stating "not good for invertebrates on the bottle". Stay away from using any copper based medications in a tank with ghost shrimps.

Diet / Fish Food : Omnivorous - will eat almost anything you feed it and also a good bottom feeder. This is not an effective algae eater.

Tank Region : Usually stays close to its burrow in the sand or gravel.

Gender : Hard to determine, no noticeable external differences between males and females. Females will carry the eggs.

Animalia. Arthropoda. Crustacea. Cambaridae

Family description

Scientific classification

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Infraorder: Astacidea
Superfamily: Astacoidea
Family: Cambaridae, Hobbs, 1942

Genera

Barbicambarus
Bouchardina
Cambarellus
Cambaroides
Cambarus
Distocambarus
Fallicambarus
Faxonella
Hobbseus
Orconectes
Procambarus
Troglocambarus

Cambaridae is the largest of the three families of freshwater crayfish, with over 400 species.[1] Most of the species in the family are native to North America east of the Great Divide, such as the invasive species Procambarus clarkii and Orconectes rusticus, with fewer species living in East Asia and Japan, such as zarigani (Cambaroides japonicus).

A 2006 molecular study suggested that the family Cambaridae may be paraphyletic, with the family Astacidae nested within it, and the status of the genus Cambaroides remains unclear.[2]

Cambarellus patzcuarensis.

Scientific classification

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Cambaridae
Genus: Cambarellus
Species: C. patzcuarensis
Binomial name
Cambarellus patzcuarensis
Villalobos, 1943

Cambarellus patzcuarensis is a crayfish in the family Cambaridae.[1]

Description

It has a body measuring 4–5 centimetres (1.6–2.0 in), including claws. Most specimens found in the wild are brown, sometimes with a gray or blue tint. Cambarellus patzcuarensis var. "Orange" (Mexican dwarf crayfish, sometimes Mexican dwarf orange crayfish) is an orange-coloured mutation often held in aquariums, but this form is rarely found in the wild.[2]

Distribution

The species is named after Lake Pátzcuaro, at an altitude of 2,035 metres (6,677 ft) in Michoacán, Mexico. As well as Lake Pátzcuaro, C. patzcuarensis also occurs in springs in Chapultepec, Opopeo and Tzurumutaro.[3]

In the aquarium

Temp: 22-24°C (72-75°F)
Ph: 7.8
GH: 12-15
I essentially use tap water to breed them.
Genetics: It will/can interbreed with other Cambarellus species like montezumae, puer, shufeldtti, etc.

This outstanding looking crayfish is commonly known as orange dwarf cray. It can show different varieties of tones of orange. They can be molted or striped. Their origin is not well known. Some people say the Cambarellus patzcuarensis sp. Orange was selectively bred in Germany from the wild form of the Cambarellus patzcuarensis which is from Mexico. Others say this wild form of C patzcuarensis was interbred in Germany with another dwarf cray in order to get their beautiful color. I have had the Cambarellus patzcuarensis sp. Orange for around a year now. Recently I have been able to breed them and am currently on my fourth batch at the moment.

Animalia. Mollusca. Gastropoda. Neritidae

Family description

Scientific classification

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
(unranked): clade Neritimorpha
clade Cycloneritimorpha
Superfamily: Neritoidea
Family: Neritidae, Rafinesque, 1815

Diversity

About 110 freshwater species[1] some brackish water species and some fully marine species

Neritidae, common name the nerites, is a taxonomic family of small to medium-sized saltwater and freshwater snails which have a gill and a distinctive operculum, marine, brackish water and freshwater gastropod mollusks in the order Neritoida.

The family Neritidae includes marine genera such as Nerita, marine and freshwater genera such as Neritina, and freshwater and brackish water genera such as Theodoxus.

A dish of cooked nerites from the Rajang River, Sarawak, Malaysia.

The common name "nerite" as well as the family name Neritidae and the genus name Nerita, are derived from the name of Nerites, who was a sea god in Greek mythology.

Neritina natalensis sp. "Zebra". Zebra Nerite Snail

Scientific classification

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
clade Cycloneritimorpha
Superfamily: Neritoidea
Family: Neritidae
Genus: Neritina
Species: N. natalensis
Binomial name: Neritina natalensis, Reeve, L.A., 1845

Overview

The Zebra Nerite Snail is one of the most, if not the most, popular nerite snail in the hobby. Its coloration is a beautiful golden shell with black jagged-edged stripes running down. It is one of the larger nerite snail with a size ranging from 1/2" to a full inch in size. I have seen some rather large ones.

This species occurs in Africa: in Kenya, Mozambique, Somalia, South Africa, and Tanzania.[

Neritina natalensis is a species of small freshwater snail with an operculum, an aquatic gastropod mollusk in the family Neritidae, the nerites.

Breeding

One downside to the Zebra Nerite Snail, and this applies to most other nerite snails, is its inability to breed in pure freshwater. The Zebra Nerite Snail requires brackish water in order to breed successfully. Some hobbyists have been somewhat successful in breeding nerite snails but it does not seem that the young snails survive for too long. Some may look at this as a plus, meaning that the Zebra Nerite will not over populate a tank and become another pest in the aquarium.

Appearance

The Zebra Nerite Snail is typically black and gold, or sometimes a gold-lime coloration. The coloration pattern is not a swirl but rather the color extends in lines from the very back tip of the snail. The Zebra Nerite Snail is one of the most popular, if not the most, due to this beautiful coloration and pattern.

Feeding

Another plus for the Zebra Nerite Snail is its algae eating abilities. This snail will clean your tank glass spotless and also clean algae off of rocks and even leaves. Many hobbyists purchase the Zebra Nerite Snail more because of its algae eating abilities than its visual looks. It is recommended that you supplement their diet with algae wafers or similar type food since the Tracked Nerite Snail may not be able to sustain itself solely on algae in the tank. This species is also larger than other nerite snails and will not be able to successfully eat algae off of small leaves due to its weight.

Behavior

The Zebra Nerite Snail can *tend to escape from a tank* and make its way outside of the tank. It is considered a tidal snail and can live outside of water. Simply pick them up and put them back inside of the tank, they will survive as long as they have not been out of the tank for too long. *It is recommend to keep an eye on them and look around the tank occasionally for possible escapes*. It is thought that when the snail is uncomfortable it will escape, but will not when happy. It is also an extremely docile creature and does not bother any other aquarium inhabitants.

A peaceful snail, will not bother tank inhabitants. However, should not be kept with aggressive fish that may attack it such as Loaches or Pufferfish.

Animalia. Mollusca. Gastropoda. Ampullariidae

Family description

Scientific classification

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
(unranked): clade Caenogastropoda
informal group Architaenioglossa
Superfamily: Ampullarioidea
Family: Ampullariidae, J. E. Gray, 1824[2]
Diversity: 105-170 freshwater species[3], 9 genera[1], more than 150 nominal species[1]
Synonyms: Pilidae

Ampullariidae, common name the apple snails, is a family of large freshwater snails, aquatic gastropod mollusks with a gill and an operculum. This family is in the superfamily Ampullarioidea and is the type family of that superfamily.[4]

The Ampullariidae are unusual because they have both a gill and a lung, the mantle cavity being divided in order to separate the two types of respiratory structures. This adaptation allows these snails to be amphibious.

Genera

Ampullariidae are probably of Gondwanan origin.[1] The diversification of Ampullariidae started probably after the separation of African Plate and South American Plate.[1] The oldest known ampullariids from Africa and Asia are 160 millions years old.[1] The oldest known ampullariids from America are 50 millions years old.[1] The sister group of Ampullariidae has not been clearly identified yet.[1]

Distribution

Genera Asolene, Felipponea, Marisa, and Pomacea are New World genera (native to South America, Central America, the West Indies and the Southern U.S.A.).[1] The genera Afropomus, Lanistes, and Saulea are found in Africa.[1] The genus Pila is native to both Africa and Asia.[1]

Ecology

Apple snails are exceptionally well adapted to tropical regions characterized by periods of drought alternating with periods of high rainfall. This adaptation is reflected in their life style; they are moderately amphibious. They have an operculum which enables the snail to seal the shell entrance to prevent drying out while they are buried in the mud during dry periods.

One of the more typical adaptations of apple snails is the branchial respiration. The snail has a system comparable to the gills of a fish (at the right side of the snail body) to breathe under water as well as a lung (at the left side of the body) to respirate air. This lung/gill combination expands the action radius of the snail in search for food. It is part of the snail's natural behaviour to leave the water when the food supply below the surface becomes inadequate.

Several apple snail genera (Pomacea, Pila and Asolene/Pomella) deposit eggs above the waterline in calcareous clutches. This remarkable strategy of aquatic snails protects the eggs against predation by fish and other aquatic inhabitants. Another anti-predator adaptation in the apple snail genera Pomacea and Pila, is the tubular siphon, used to breathe air while submerged, reducing vulnerability to attacking birds. The apple snail's usual enemy is the Limpkin.

Apple snails inhabit various ecosystems: ponds, swamps and rivers. Although they occasionally leave the water, they spend most of their time under water. Unlike the pulmonate snail families, apple snails are not hermaphroditic, but gonochoristic; i.e. they have separate genders.

As a common aquarium animal

Apple snails are popular aquarium pets because of their attractive appearance and size. When properly cared for, some apple snail species can reach 15 cm (5.9 in) diameter. Apple snails include species that are the biggest living freshwater snails on Earth.

The most common apple snail in aquarium shops is Pomacea bridgesii, also called Pomacea diffusa, (the spike-topped apple snail). This species comes in different colours from brown to albino or yellow and even blue, purple, pink, and jade, with or without banding. Another common apple snail is Pomacea canaliculata; this snail is bigger, rounder and is more likely to eat aquatic plants, which makes it less suitable for most aquaria. This species can also have different shell and body colours. The "giant ramshorn snail" (Marisa cornuarietis) although not always recognized as an apple snail due to its discoidal shape, is also a popular aquatic pet. Occasionally, the Florida apple snail (Pomacea paludosa) is found in the aquarium trade and these are often collected in the wild from ditches and ponds in Florida. The giant Pomacea maculata is rarely used as an aquarium species.

Apple snails are often sold under the name "golden (ivory, blue, black...) mystery snail" and they are given incorrect names like Ampullarius for the genus instead of Pomacea and wrong species names like gigas instead of maculata.

These snails sometimes become inactive (especially when first introduced to a new tank, probably from the stress of moving from one habitat to another), and may not move for several days, but once the snail is acclimated it becomes active again.

Feeding habits

In captivity, as well as eating vegetables and fish food pellets, apple snails will also eat other foods if they are available. They will sometimes eat brine shrimps and other frozen foods, or dead fish and insects. Generally, they will also eat any of the microscopic vegetation that grow on the tank rocks or walls. Snails will climb out of the water to reach food that is above the waterline. Because of their ability to do this they have become a nuisance in Asia, where they feed on crops.

Times of activity

In captivity, apple snails are most active at night. During the day they usually retreat to somewhere shaded. When it is night time, the apple snail becomes active and engages in behaviors relating to feeding, as well as mating and laying eggs.

In an aquarium that is well-lit, the exterior of the shell of apple snails may grow filamentous green algae. This is one possible source of food for juvenile snails.

Temperature

The optimal aquarium water temperature for apple snails is between 18 to 28 °C (64 to 82 °F). Apple snails are more active and lively in the higher part of this temperature range. In these higher temperatures, the snails tend to eat, crawl and grow faster. At the lower end of the temperature range, 18 °C/64 °F, the snails may become inactive.

As a pest

In the 1980s, Pomacea canaliculata was introduced in Taiwan to start an escargot industry.[8] It was thought that such food culture could provide valuable proteins for farmers, who primarily live on a rice diet. However, the snails did not become a culinary success. Additionally the imported snails (like the native apple snail population, Pila) were able to transfer a parasite called Angiostrongylus cantonensis. This parasite can infect humans if snails are eaten that have not been thoroughly cooked first.

Instead of becoming a valuable food source, the introduced snails escaped and became a serious threat to rice production and the native ecosystems. During the 1980s the introduced snails rapidly spread to Indonesia, Thailand, Cambodia,[9] Hong Kong, southern China, Japan and the Philippines, and there are indications that they are currently invading Australia.

Hawaii experienced the same introduction of Pomacea for culinary purposes, and its taro industry is now suffering because of it.

Genera Marisa, Pila and Pomacea (except of Pomacea diffusa and except of native Pomacea paludosa) are already established in the USA, and are considered to represent a potentially serious threat as a pest, an invasive species which could negatively effect agriculture, natural ecosystems, human health or commerce. Therefore it has been suggested that these genera be given top national quarantine significance in the USA.[10]

Nevertheless, apple snails are considered a delicacy in several regions of the world, and they are often sold in East and Pacific Asian markets for consumption.

As a bio-control agent

Pomacea and Marisa species have been introduced to Africa and Asia in an attempt to control other medically problematic snails in the family Planorbidae: Bulinus species and Biophalaria species, which serve as intermediate hosts for trematoda parasites. These parasites can cause swimmers itch and schistosomiasis, a disease that affects over 200 million people in tropical regions. One of the species introduced as bio-agent is Marisa cornuarietis; this snail competes with other snails and also directly preys on other species.

Pomacea maculata (Ampullaria Gigas). Mystery Snail

Origin: South America
Sexing: Monoecious
Temperature: Immaterial
Attitude: Eats day and night
Security: Carries it on back
Foods: Any food on bottom
Water: Needs hard water
Incubation: 2 to 3 weeks
Brood Size: About 100 eggs
Breeding: Eggs laid above water

Appeal. Mystery snails add an element of intrigue to your aquaria. Their waving tentacles and ever-chewing radula (scraping tongue) look rather interesting. They also clean up excess food – a service that keeps tanks healthy. Cleaning up excess food puts them in the "must keep" category.

Food. In the wild, mystery snails eat algae, plant leaves, and anything else they find on the bottom. In captivity, mystery snails eat the same thing (if they have to) but prefer fish food – a much more nutritious menu. Oddly enough, they do best in planted aquaria. They chew on plant leaves a little bit but much prefer fish food.

Good Mixers. Mystery snails get along with anything except fish eggs. (They will finish off a spawn of angel eggs overnight.) On the other side of the coin, nippy fish torture them unmercifully by chewing on their tentacles and eyestalks. Keep them away from snail eaters such as clown loaches, cichlids, and puffers.

Apple Snails: Ampullaria gigas looks just like a mystery snail but grows much larger – as big as a standard baseball. Apple snails are unbelievably prodigious plant eaters. Apple snails eat plants AND sponge filters.

Trapdoor Snails. The trapdoor snails (livebearing snails kept in fish ponds) also look much like mystery snails. Trapdoor snails, unlike the Ampullariae, breathe underwater thru their gills. They are also destructive plant eaters in your aquaria. Trapdoor snails do fine in plant-free aquaria. Pond keepers use them to control algae.

Water. Mystery snails thrive in hard, alkaline water (like comes out of our Des Moines faucets -- carbonates 220 ppm). Soft, acid water tends to dissolve their shells (make pits in them or turn them white). Add NovAqua to remove the chlorine and any heavy metals. Salt and copper both will stress and/or kill mystery snails.

Snail Killers. The commercial snail poisons (and some medications) kill mystery snails because they contain copper. We find these only partially effective. And when they work, you have a layer of dead snails on your aquarium floor. Most people want to kill the little fast-reproducing pond snails as opposed to the more desirable mystery snails.

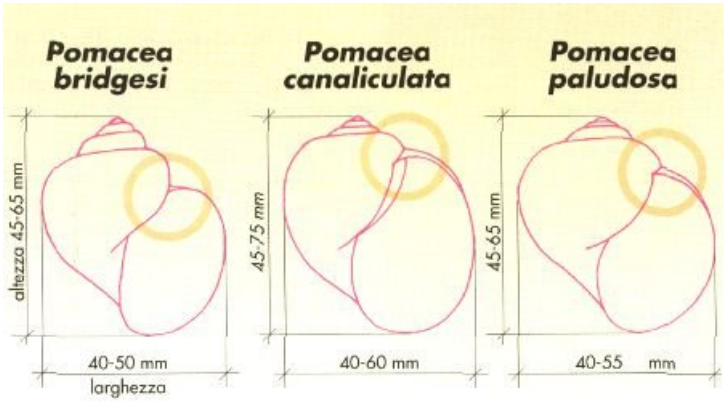
Snorkelers. Since they breathe air, mystery snails can live in low oxygen waters. Still, they prefer clean water. They take in oxygen at the water's surface thru an extendible air tube.

Breeding. Two mystery snails kept together will usually figure out how to breed on their own. The secret? Lower your water level three to five inches. They crawl out of the water and lay their eggs above the water line. The egg mass looks like pink froth nearly as large as your little finger. Keep them humid and they hatch in two to three weeks. The babies fall into the water and rock and roll from day one. They grow best when kept in tanks separate from the adults. Little ones crawl inside the shells of adult mysteries and irritate them. Typical kids.

Pomacea canaliculata (Ampullaria Australis)

http://www.oceanoblu.com/stocklist/scheda/380/ampullaria-australis-gialla

Of the 50 species of Pomacea officially recognized, only two are readily available on our market: Pomacea Bridges (Reeve, 1856) and Pomacea canaliculata (Lamarck, 1819). From time to time there are also imported some magnificent specimens of Pomacea paludosa (Say, 1829), a species that, being originally from Florida, is particularly widespread among American hobbyists. The misleading and obsolete scientific names by which these molluscs are marketed (eg Ampullarius cuprina, Ampullarius australis, etc..) Unfortunately create some confusion among hobbyists, now tired of doing "a bundle of all the snails' and want to know which species actually belong to their Pomacea, given also the different food preferences of these gastropods. However, the anatomical differences between the three species mentioned above are numerous and easy to find simply by observing the shells (for easy identification see drawing below).



Il disegno evidenzia la diversa struttura del guscio nelle tre specie più comuni in acquario.

Drawings by E. Sword.

In particular, to distinguish P. bridgesi by P. canaliculaia can be especially useful for those who plan to house them in aquariums populated by plants. In this case, P. canaliculata species is the least desirable, since it shows a greater tendency to eat fresh vegetables, while P. bridgesi prefer detritus, algae and dead leaves in the process of decomposition.

Animalia. Chordata. Amphibia. Pipidae

Family description

Lower Cretaceous to Recent

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Amphibia
Subclass: Lissamphibia
Superorder: Batrachia
Order: Anura
Suborder: Mesobatrachia
Family: Pipidae

The Pipidae are a family of primitive, tongueless frogs. The thirty species in the family Pipidae are found in tropical South America (genus Pipa) and sub-Saharan Africa (four other genera).

These frogs are exclusively aquatic and have numerous morphological modifications befitting their habitat. For example, the feet are completely webbed, the body is flattened, and a lateral line system is present[1]. In addition, pipids possess highly modified ears for producing and receiving sound underwater. They lack a tongue or vocal cords, instead having bony rods in the larynx that help produce sound. They range from 4 to 19 centimeters (1.6 to 7.5 in) in body length.[2]

The fossil record for pipids is relatively good with twelve extinct species known. Six of these are placed in the extant genus Xenopus, the remainder in extinct genera. These fossils are known from Africa, South America, and Middle East back to the Lower Cretaceous.[2]

Genera

Hymenochirus - Dwarf clawed frogs
Pseudhymenochirus - Merlin's clawed frog
Xenopus - Common clawed frogs
Silurana - Tropical clawed frogs
Pipa - Surinam toads

Hymenochirus boettgeri. Broscuța gri. - decedat

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Amphibia
Order: Anura
Family: Pipidae
Genus: Hymenochirus
Species: H. boettgeri
Binomial name: Hymenochirus boettgeri, (Tornier, 1896)

Hymenochirus boettgeri, also known as Congo Dwarf Clawed Frog or Dwarf African Frog, is a species of frog in the Pipidae family. It lives in central Africa. This species is also bred and sold as an aquatic pet. As pets, Dwarf African Frogs can live peacefully among other fish in an aquarium. These frogs can be fed regular fish flakes, although they especially like to eat freeze-dried bloodworms and the elodea plant. However, if you do choose to add this critter to your aquarium, make sure the tank is covered—This species is not afraid to and will jump out of its tank.

Broastele din salbaticie se confrunta cu o scadere a numarului si cu extinctia, in mare parte din cauza activitatilor umane. Din pacate, piata animalelor de companie contribuie la acutizarea crizei extinctiei amfibienilor si la raspandirea unei infectii devastatoare cu ciuperca Chytrid. Din aceasta cauza ar trebui sa cumperi numai broaste de care esti sigur ca sunt specii captive locale si care au fost testate pentru aceasta infectie.

Durata de viata: in jur de 5 ani.

Dimensiunea si aspectul: Broastele pitice ating, la maturitate, o lungime de 2,5 – 3,8 cm. De obicei, ele au o culoare gri-maroniu deschis, cu puncte mai inchise. Chiar daca uneori au o culoare mai deschisa, varietatea albinoasa este specifica broastelor africane cu gheare, care sunt mai mari, si nu apare la broastele pitice. Broastele africane cu gheare tinere seamana la aspect cu broastele pitice; uita-te daca au membrane intre degetele din fata; broastele pitice au picioarele din fata palmate, spre deosebire de broastele mai mari.

Acvariul pentru broastele pitice

Broastele pitice nu au nevoie de un acvariu urias – iti trebuie in jur de 4,5 litri de apa pentru fiecare broasca. Pot fi tinute in grupuri sau cu o comunitate de pesti care sa fie de aproximativ aceeasi marime, dar trebuie sa ai grija ca si acvariul sa fie corespunzator ca dimensiuni. Evita acvariile inalte, adanci, deoarece broastele trebuie sa iasa cu usurinta la suprafata, pentru a respira. Lasa un gol de aer intre suprafata apei si capacul acvariului. De asemenea, acvariul trebuie sa aiba un capac potrivit, pentru ca broastele vor incerca sa iasa.

Apa si sistemul de filtrare

Pune in acvariu numai apa fara clor (foloseste picaturi de dedurizare de la magazinul de animale). Filtrarea nu este strict necesara daca in acvariu ai doar broaste (schimba partial apa in mod frecvent), dar daca adaugi si pesti, va fi necesar un filtru. Foloseste un filtru care tulbura foarte putin apa, deoarece broastelor le place apa statatoare, si asigura-te ca nu pot ramane blocate in orificiile de aspiratie sau in spatele gurii de asipratie/filtrului.

broasca pitica

Temperatura: intre 24-27 C.

Substratul

Poti pune nisip sau pietris fin pe fundul acvariului. Nu folosi pietre prea mari; in caz contrar, broastele isi pot prinde picioarele. Ar trebui sa te asiguri ca animalutele nu pot ingera nisipul sau pietrisul odata cu mancarea.

Daca se intampla asta, poti incerca un alt tip de pietris sau le poti hrani dintr-o farfurioara pe care o pui in apa, peste pietris (foloseste o pipeta pentru a pune mancarea direct pe farfurioara din apa).

Plantele si decorul

Broastelor pitice le place sa aiba locuri unde sa se ascunda. Pune in acvariu plante naturale sau plante din matase. De asemenea, ofera-le locuri in care sa se ascunda, prin folosirea decoratiunilor din acvariu, a unui lemn plutitor sau a unor mici ghivece din teracota, asezate pe margine. Toate decorurile (inclusiv plantele artificiale) trebuie sa fie netede, pentru a nu rani pielea delicata a broastelor.

Hranirea broastelor pitice

Broastele pitice se hranesc cu ce gasesc pe fundul acvariului. Poate fi folosita hrana vie, congelata sau hrana uscata congelata si probabil ca cel mai bine este sa-i oferi o combinatie intre acestea. Viermi rosii, viermi tubifex, purici de balta (daphnia), creveti de apa sarata, viermi negri, sau rame maruntite (cat sa poata fi inghitite). Broastele pitice inghit mancarea intreaga. Rareori accepta hrana sub forma de fulgi; unele din ele accepta hrana granulata (cumpara doar granule speciale pentru broaste), dar acestea pot murdari apa foarte repede.

Alte observatii:

• Broastele pitice pot fi tinute in grupuri, dar si cu pesti tropicali. Pestii ar trebui sa fie cam la fel de mari ca si broasca, dar, daca sunt mai mici, broastele vor incerca sa ii manance, iar daca sunt mai mari, ei vor incerca sa manance broastele.

• Asigura-te ca nu folosesti niciodata sapun pentru a spala acvariul sau galeata sau orice alte obiecte pe care le folosesti la intretinerea acvariului. Amfibienii au tegumentul poros si sunt foarte sensibili la substantele chimice si la detergent. Broastele pitice nu trebuie apucate cu mana.

• Maturitatea sexuala este atinsa la aproximativ 9 luni. Masculilor le cresc glande care arata ca niste mici umflaturi roz sau albe, in spatele picioarelor din fata. Masculii vor incepe si sa cante (sa faca zgomot), in incercarea de a atrage partenera. Femelele tind sa fie putin mai mari decat masculii si au o umflatura proeminenta in zona in care se afla cloaca, intre picioarele din spate

Animalia. Chordata. Actinopterygii. Characiformes. Characidae.

Family description

Temporal range: Upper Miocene - Recent[1]

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Superclass: Osteichthyes
Class: Actinopterygii
Subclass: Neopterygii
Infraclass: Teleostei
Superorder: Ostariophysi
Order: Characiformes
Family: Characidae
Subfamilies

- Agoniatinae
- Aphyocharacinae
- Bryconinae
- Characinae
- Cheirodontinae
- Clupeacharacinae
- Glandulocaudinae
- Iguanodectinae
- Rhoadsiinae
- Serrasalminae (disputed)
- Stethaprioninae
- Tetragonopterinae

The Characidae, characids or characins are a family of freshwater subtropical and tropical fish, belonging to the order Characiformes. The name "characins" is the historical one, but scientists today tend to prefer "characids" to reflect their status as a by and large monophyletic group at family rank. To arrive there, this family has undergone much systematic and taxonomic change. Among those fishes that remain in the Characidae for the time being are the tetras, comprising the very similar genera Hemigrammus and Hyphessobrycon, as well as a few related forms such as the cave and neon tetras. Fish of this family are important as food and also include popular aquarium fish species.[2]

These fish vary in length, though many are less than 3 centimetres (1 in). The smallest species[citation needed] grows to a maximum length of 13 millimetres (0.5 in).[1]

These fish inhabit a wide range and a variety of habitats. They originate in the Americas, ranging from southwestern Texas and Mexico through Central and South America.[2] Many of these fish come from rivers, but for example the blind cave tetra even inhabits caves.

Systematics

This family has undergone a large amount of systematic and taxonomic change. More recent revision has moved many former members of the family into their own related but distinct families - the pencilfishes of the genus Nannostomus are a typical example, having now been moved into the Lebiasinidae, the assorted predatory species belonging to Hoplias and Hoplerythrinus have now been moved into the Erythrinidae, and the sabre-toothed fishes of the genus Hydrolycus have been moved into the Cynodontidae. The formner subfamily Alestiinae was promoted to family level (Alestiidae) and the subfamilies Crenuchinae and Characidiinae were moved to the family Crenuchidae.[2]

The piranhas and relatives (like these Disk Tetras, Myleus schomburgkii) might be a distinct family

Other fish families that were formerly classified as members of the Characidae, but which were moved into separate families of their own during recent taxonomic revisions (post-1994) include Acestrorhynchidae, Anostomidae, Chilodontidae, Citharinidae, Ctenoluciidae, Curimatidae, Distichodontidae, Gasteropelecidae, Hemiodontidae, Hepsetidae, Parodontidae, and Prochilodontidae.[citation needed]

The larger piranhas were originally classified as belonging to the Characidae, but various revisions place them in their own related family, the Serrasalmidae. This reassignment has yet to enjoy universal acceptance, but is gaining in popularity among taxonomists working with these fishes. Given the current state of flux of the Characidae, a number of other changes will doubtless take place, reassigning once-familiar species to other families. Indeed, the entire phylogeny of the Ostariophysi - fishes possessing a Weberian apparatus - has yet to be conclusively settled. Until that phylogeny is settled, the opportunity for yet more upheavals within the taxonomy of the characoid fishes is considerable.

A large number of taxa in this family are incertae sedis. The relationships of many fish in this family – in particular species traditionally placed in the Tetragonopterinae, which had become something of a "wastebin taxon" – are poorly known,[2] a comprehensive phylogenetic study for the entire family is needed.[1] The genera Hyphessobrycon, Astyanax, Hemigrammus, Moenkhausia, and Bryconamericus include the largest number of currently recognized species among characid fishes that are in need of revision;[3] Astyanax and Hyphessobrycon in the usual delimitation are among the largest genera in this family.[2] These genera were originally proposed between 1854 and 1908 and are still more or less defined as by Carl H. Eigenmann in 1917, even though diverse species have been added to each genus since that time. The anatomical diversity within each genus, the fact that each of these generic groups at the present time cannot be well-defined, and the high number of species involved are the major reasons for the lack of phylogenetic analyses dealing with the relationships of the species within these generic "groups".[3]

Paracheirodon innesi. Neon tetra

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Characiformes
Family: Characidae
Genus: Paracheirodon
Species: P. innesi
Binomial name: Paracheirodon innesi, (Myers, 1936) [1]

The neon tetra (Paracheirodon innesi) is a freshwater fish of the characin family (family Characidae) of order Characiformes. The type species of its genus, it is native to blackwater or clearwater streams in southeastern Colombia, eastern Peru, and western Brazil, including the tributaries of the Solimões where the water is between 20–26 °C (68–79 °F).[2] It is not found in the whitewater rivers of Andean origin. Its bright colouring makes the fish visible to conspecifics in the dark blackwater streams,[3] and is also the main reason for its popularity as a tropical fish.

Description

The Neon Tetra has a light-blue back over a silver-white abdomen. The fish is characterized by an iridescent blue horizontal stripe along each side of the fish from its nose to the base of the adipose fin, and an iridescent red stripe that begins at the middle of the body and extends posteriorly to the base of the caudal fin. Most, if not all, will develop an olive green sheen lining their backs. The fish is completely transparent (including fins) except for these markings. During the night, the blue and red become silver as the fish rests—it reactivates once it becomes active in the morning. It grows to approximately 3 cm (1.2 in) in overall length. Sexual dimorphism is slight, the female having a slightly larger belly, and a bent iridescent stripe rather than the male's straight stripe.

Economics

The Neon Tetra was first imported from South America and was described by renowned ichthyologist Dr. George S. Myers in 1936, and named after Dr. William T. Innes. P. innesi is one of the most popular aquarium fish, having been bred in tremendous numbers for the trade. Most neon tetras available in the United States are imported from Hong Kong, Singapore, and Thailand, where they are farm raised, or to a lesser extent (<5%) from Colombia, Peru, and Brazil, where they are collected from the wild. During a single month, an average of 1.8 million neon tetras with an estimated value of $175,000 are imported into the United States for the aquarium trade.[4] With the exception of home aquarists and a few commercial farms that breed neon tetras experimentally, captive breeding on a commercial scale is nonexistent in the United States.

In the aquarium

While commercially bred neon tetras have adapted well to a wide range of water conditions, in the wild they inhabit very soft, acidic waters that are usually cooler than the 25 °C (77 °F) most tropical aquaria are maintained at.[2] Neon Tetras can have a lifespan of up to 10 years, normally about 5 in an aquarium.

Neon tetras are considered easy to keep in a community aquarium that is at least 60 cm (24 inches), with a pH of 6.0–7.8 and KH of 1.0–2.0. However, they will die if traumatized by dramatic changes to their environment. They tend to be timid and, because of their small size, should not be kept with large or aggressive fish who may bully or simply eat them. Fish that mix well in an aquarium are other types of tetras, such as the rummy-nose tetra, cardinal tetra, and glowlight tetra, and other community fish that live well in an ideal Tetra water condition. Mid-level feeders, they are best kept in schools of six or more, for the shoaling effect when they move around the tank. They shoal naturally in the wild and are thus happier, more brightly colored, and more active when kept as a shoal as opposed to singly and feel more secure. Their colour and the iridescent stripe may become dim at night, and can be virtually invisible after a period of darkness. The color may also fade during a period of stress,

such as human intervention into the tank. Neons are best kept in a densely planted tank with subdued light and an ideal temperature of 21–27 °C (70–81 °F) to resemble their native Amazon environment.

Nutrition

Neon tetras are omnivores and will accept most flake foods, if sufficiently small, but should also have some small foods such as brine shrimp, daphnia, freeze-dried bloodworms, tubifex, which can be stuck to the side of the aquarium, and micro pellet food to supplement their diet. A tropical sinking pellet is ideal as most brands of these include natural color enhancers that bring out the color in neon tetras. Some frozen foods including frozen blood worms add variety to their diet.

Breeding

The male is slender, and the blue line is straighter. The female is rounder, producing a bent blue line. Some say that the females look plumper when viewed from above but this is disputed. However, the 'straightness' of the line and the plumpness of the female might occasionally be due to the eggs she is carrying.

To breed Neon Tetras, place a pair of the species in a breeding tank without any light, and gradually increase the lighting until spawning occurs. Other inducers include mosquito larvae and a hardness of less than 4 degrees. Some also recommend letting the level of nitrates rise, then do at least 50% water change to simulate the fresh rain the tetras get in their natural habitat, the Amazon. It is recommended that everything you place in the aquarium be sterilized, as well as the aquarium top. Because the adults will often eat newly-hatched fry, it is best to remove them as soon as the eggs have been laid. The eggs are especially sensitive to light. Eggs will hatch within 24 hours of the laying. Fry can be fed infusoria, especially rotifers and egg yolk for 1 to 4 weeks, followed by nauplii of brine shrimp, shaved cattle liver, and formulated diets. Fry will achieve their adult coloration at approximately one month of age. Adults can spawn every two weeks.

Disease

Unfortunately, neon tetras are occasionally afflicted by the so-called "Neon Tetra Disease" (NTD) or Pleistophora, a sporozoan disease caused by Pleistophora hyphessobryconis. Despite being a well-known condition, it is currently incurable and often fatal to the fish.

The disease cycle begins when microsporidian parasite spores enter the fish after it consumes infected material such as the bodies of a dead fish, or live food such as tubifex, which may serve as intermediate hosts. The disease is most likely to be passed on from newly acquired fish, which have not been quarantined.

Symptoms:

Restlessness.
Fish begins to lose coloration.
As cysts develop, the body may become lumpy.
Fish has difficulty swimming.
In advanced cases the spine may become curved.
Secondary infections such as fin rot and bloating.

Note that there is a so-called "false neon disease", which is bacterial, and shows very similar symptoms. It is impossible for the home aquarist to determine for certain the difference between NTD and false NTD on the basis of visible symptoms alone, without laboratory backup. This disease has also been confused with Columnaris (mouth rot, mouth fungus, 'flex').

To date, there is no known cure: the only 'treatment' is the immediate removal of diseased fish to preserve the remaining fish, but no way to save the diseased fish. The use of a diatom filter, which can reduce the number of free parasites in the water, may help.

Animalia. Chordata. Actinopterygii. Cypriniformes. Cobitidae

Family description

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Superclass: Osteichthyes
Class: Actinopterygii
Subclass: Neopterygii
Infraclass: Teleostei
Superorder: Ostariophysi
Order: Cypriniformes
Superfamily: Cobitoidea
Family: Cobitidae
Subfamilies
Cobitinae
Botiinae

Cobitidae is the family of the true loaches, which are Old World freshwater fish. They occur throughout Eurasia and in Morocco, and inhabit riverine ecosystems. Today, most "loaches" are placed in other families (see below). But more than 100 species remain in the Cobitidae, while the number of genera has almost doubled to nearly 30 in the past few years[when?] due to new discoveries and divisions of older genera. New species are being described regularly.[1]

Description and ecology

The body forms of Cobitidae range from vermiform – worm-shaped, long and thin – to fusiform – spindle-shaped, cylindrical and tapering toward the ends. Most true loaches do not have true scales, and like many other Cypriniformes or catfishes, they have barbels at their mouths (usually 3-6 pairs). Some other traits typically found in this family are a small bottom-facing mouth suited to their scavenging benthic lifestyle, an erectile spine below the eye, and a single row of pharyngeal (throat) teeth.

True loaches are mostly scavengers and are omnivorous, usually not very picky about their food. They may eat aquatic crustaceans, insects and other small invertebrates as well as scraps of organic detritus. Many live in eutrophic waters of generally poor quality and feed on tubifex worms and similar benthos associated with such habitat. Some of these loaches have adapted to low oxygen levels in warm, muddy rivers or dirty ponds by being able to gulp up atmospheric oxygen from the air. Some species, particularly from the genera Cobitis and especially Misgurnus are sensitive to changing air pressure. They change their behavior accordingly, and as these changes in activity are usually followed by a change in weather, they are commonly known as "weatherfishes" or "weather loaches".

Because of their scavenging nature and their ability to adapt to many freshwater ecosystems, some Cobitidae have been introduced to foreign lands where they may pose problems to local wildlife as invasive species[verification needed][citation needed]. Other true loaches, many of them migratory fish, have been seriously affected by habitat destruction, chemical pollution and damming, and are considered threatened species today. Some migratory species are popular aquarium fish and since they are very hard to raise in captivity, overfishing has seriously depleted once-common stocks in several cases.

Systematics

The other "loaches" used to be included in this family, but nowadays are recognized as well-distinct members of the order Cypriniformes. Together with the suckers (Catostomidae), the "loaches" made up the superfamily Cobitoidea. However, the sucking loaches (Gyrinocheilidae) were easily recognizable as relatives of the suckers. [2]

Eventually it was realized that the hillstream loaches, though more similar to the true loaches than the other two presumed Cobitoidea, are nonetheless distinct enough to be better regarded a full-blown family Balitoridae. And as it seems the "sucking Cobitoidea" are quite distant indeed, perhaps even markedly closer to the Cyprinidae, and thus the old superfamily Catostomoidea warrants revalidation. Finally, the puzzling mountain carps were most often considered a distinct family Psilorhynchidae in recent times. But in a number of systematic schemes, they were placed in the Balitoridae (or Balitorinae, when these were included in the Cobitidae). In fact, they seem to be loachlike carps and belong in the Cyprinidae.[3]

The true loaches can be subdivided into two subfamilies, the typically fusiform Botiinae and the typically vermiform Cobitinae:

Clown loaches (Chromobotia macracanthus, formerly Botia macracantha: Botiinae)
European Weatherfish, Misgurnus fossilis (Cobitinae)
Gongota Loach, Somileptes gongota (Cobitinae)

Use by humans

Some true loaches are popular as food fish in East Asian countries such as Japan. These are of importance in the fisheries or being raised in aquaculture. Small species may occasionally be caught for bait.

As aquarium fish

Many of the more brightly-colored species, in particular Botiinae, are popular with freshwater aquarists and are therefore of importance in the aquarium trade. The more colorful tropical species that are kept as pets are mainly South Asian and Southeast Asian Botiinae. Cobitidae often encountered in aquarium trade include:

Clown Loach, Chromobotia macracanthus
Dojo Loach, Misgurnus anguillicaudatus
Horseface Loach, Acantopsis choirorhynchus
Skunk Loach, Yasuhikotakia morleti
Kuhli Loach, Pangio kuhlii
Yoyo Loach, Botia almorhae
Zebra Loach, Botia striata
Bengal Loach, Botia dario
Burmese Border loach, Botia kubotai

Cultural references

Loaches of some sort have been present in several video games:

In the Nintendo 64 game The Legend of Zelda: Ocarina of Time, the largest fish you can catch is the "Hylian loach". Every time you enter the fishing pond as an adult in Ocarina of Time, there is a 1 in 4 (25 pc) chance this fish will be present in the pond. It has a long low dorsal fin unlike Cobitidae and looks much like a mix between a Misgurnus true loach and the Northern Snakehead (Channa argus) which is not a loach; both these fishes are quite familiar across East Asia.

The Hylian loach is also present in the fishing minigame in Nintendo Gamecube/Wii game The Legend of Zelda: Twilight Princess.

Loaches also appear in the Nintendo DS game Animal Crossing: Wild World and its Wii sequel, Animal Crossing: City Folk. They are small fish found in rivers from March to May. Not rare, one specimen sells for a mere 300 bells (as much as a black bass); thus it is apparently not – as the player character wonders when catching one – a Hylian loach. The icon, though very restricted in resolution, is a correct depiction of a Cobitinae loach with a color pattern resembling some East Asian species of Cobitis.

Shakespeare's Henry IV, Part 1 Act 2 has: "Why, they will allow us ne'er a jordan, and then we leak in your chimney; and your chamber-lie breeds fleas like a loach." This might be a misprint, or an obsolete term for a dovecote,[4] then as today notorious for "breeding" Ceratophyllus columbae fleas. Or it might indeed refer to the fish: the Spined Loach (Cobitis taenia), native to England, is very prolific, and the phrase can be taken to imply "...hosts fleas as abundantly as the Spiny Loach spawns".[5]

Chromobotia macracanthus, Clown loach

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cypriniformes
Family: Cobitidae
Subfamily: Botiinae
Genus: Chromobotia, Kottelat, 2004
Species: C. Macracanthus
Binomial name: Chromobotia macracanthus (Bleeker, 1852)

The clown loach, Chromobotia macracanthus, is a tropical freshwater fish belonging to the Cobitidae (loach) family. It is the sole member of the Chromobotia genus. It originates in inland waters in Indonesia on the islands of Sumatra and Borneo. It is a popular fish in the freshwater aquarium trade and is sold worldwide.[1]

Taxonomy and naming

The fish was first described as Cobitis macracanthus by Pieter Bleeker in 1852. In 1989, its scientific name was changed to Botia macracanthus.[2] In 2004, Dr. Maurice Kottelat divided the Botia genus, containing 47 different species, into seven separate genera, resulting in the clown loach being placed in a genus of its own, Chromobotia.[3]

The genus Chromobotia derives its name from the Greek word chromo, meaning "colour", and the regional Asian word botia, meaning "warrior" or "soldier"; the specific epithet Macracanthus is derived from the Greek word macros, meaning "large" and the Latin word acanthus, meaning "thorny", referring to the large spine below each of the fish's eyes. The common name, "clown loach" comes from the fish's bright colors and stripes (many tropical fish with stripes that stand out are commonly called "clown") as well as from its habit of 'entertaining' aquarium owners with strange habits, such as swimming upside down, or 'playing dead.'

Description and behavior

Information about the maximum size of the clown loach varies, with some estimates ranging from 11 to 14 inches (28 to 36 cm), and with typical adult sizes ranging from 7 to 10 inches (18 to 26 cm).[4] The fish's body is long and laterally compressed, with an arched dorsal surface and a flat ventral surface. Its head is relatively large and its mouth faces downward with thick, fleshy lips, and four pairs of barbels. The barbels on the lower jaw are small and difficult to see. Clown loaches can make a clicking sound when they are happy or angry.

The body is whitish-orange to reddish-orange, with three thick, black, triangular, vertical bands. The anterior band runs from the top of the head and through the eye, the medial band lies between the head and the dorsal fin, and wraps around to the ventral surface, and the posterior band covers almost all of the caudal peduncle and extends to the anal fin. There is some regional color variation within the species; the pelvic fins on fish from Borneo are reddish orange and black, while the pelvic fins on fish from Sumatra are entirely reddish orange.[5]

The fish is sexually dimorphic, with females being slightly plumper than males. In addition, the tips of the tail on the male curve inwards slightly, whereas the females have straight tips.[2]

The fish has a movable spine that lies in a groove below the eye, which may be extended as a defense mechanism. The spine may cause a painful wound, but is not venomous. It also may be used as a predation tool as it is set close to the mouth.

Distribution and habitat

Clown loaches are native to the islands of Sumatra and Borneo in Indonesia. Clear stream environments provide the optimal habitat for clown loaches, but biannual monsoon flooding forces the fish to move into flooded flood plains, or murky or blackwater rivers or lakes, for 7–8 months of the year, and clown loaches are commonly found in the flood plains of hilly areas.[6] Breeding adults migrate to smaller waterways to spawn annually.[4]

In its native habitat, the fish is found in water with a temperature range of 77 to 86 °F (25 to 30 °C), a pH between 5.0 and 8.0, and water hardness between 5 and 12 dH.[1]

In the aquarium

A harmless, very active and sociable fish, clown loaches are best kept in groups of 3-4 or more. Due to their potentially large size, a 60 to 100 gallon (230 to 380 litre) aquarium should be the minimum size used.

These fish have bifurcated subocular (located under the eyes) spines, which are used as a defense mechanism and for obtaining prey. If a loach deploys its spines while caught in a net, untangling it is difficult and can result in injury to the handler or the fish. Aquarists recommend that large specimens are double or triple bagged, or placed in a solid container when being moved.

When kept in groups smaller than 5, clown loaches may spend lots of time hiding under obstacles in the water. Tiger barbs and Panda corydoras associate happily with clown loaches, and the three fish may school together.

Clown loaches make clicking noises when they are excited or during feeding. This sound is produced by the grinding of their pharyngeal teeth. Sometimes clown loaches swim on their sides, or upside down, and appear ill, or lie on their sides on the bottom of the tank and appear to be dead. This is normal behaviour so the aquarist should be aware of it to avoid removing healthy fish from the aquarium.

If clown loaches do not come out of hiding, there are some easy things to adjust so that the clown loaches will be more comfortable. A good tank setup for a clown loach should include ample shade, real plants, hiding places and other peaceful fishes.[7] Make sure the environment is not too bright initially. Provide shade from tank lighting. The tank should not be next to a window unless ample shade is provided. Window tanks with ample sun will allow Chromobotia to warm themselves and do their dominant color dances with more splendor as they flash in and out of sunlight slicing through openings in natural cover. An example tank will have a powerhead to create a current for them to swim against as well as cover to stay under while doing so as in a mountain brook of clear water with current rushing down between boulders. In fact, clowns show a strong preference for larger rocks taken directly from mountain streams too swift to allow algae growth. They will peck at these rocks often and always sleep under and on them.

Clown loaches are keen observers of other fish in the aquarium; they observe and react accordingly. If other fish are skittish and hide, clowns will observe this and do the same. Make sure that other fish in your community tank are docile and not prone to hide. Chromobatia will all sleep together under anything they can fit under in your aquarium.

Because clown loaches come from rivers and streams, they are accustomed to having other fishes and plants in their environment. Not having plants and/or other fishes can cause clown loaches to become stressed and to go into hiding. Especially on introduction to a new tank, it is important that lots of placid, active smaller fish are present. Until you know what fish company they like best, use many colors and varieties of inexpensive minnows. Another important thing to remember is that since they do come from a fast moving river environment, they need a tank with lots of clear, well filtered and fast moving water which can be achieved with proper filtration and the use of powerheads. Stream rocks should allow resting back eddies as well as shade and cover.

Before introducing clown loaches to your tank, make sure the fish you currently have are compatible because aggressive fish will stress your clown loaches and may need to be removed. Clown loaches are particularly susceptible to Ichthyophthirius (ich),or white spot disease, so they must be watched closely when initially introducing them to a tank and when new fish are added. Due to having little or no scales at all, a reduced dosage may be required when using certain types of medication, possibly reducing the effectiveness.

A variety of food should be provided for clown loaches, and their behaviour should be observed during feeding. In a community tank other fish may take the food before it reaches the bottom, where the clown loaches normally feed. However. with a tank supported with natural environments, Clowns are very noisy surface feeders who will assert themselves to take the most and the best of bloodworm. Most clown loaches accept commercial flake food and sinking pellets as their dietary staple, but thrive with a variety of food: live (worms, brine shrimp, small snails),banana ,plant matter, freeze-dried (tubifex worms, especially if it is fortified) and frozen brine shrimp (always thaw frozen food to aquarium temperature).

Botia almorhae (Botia lohachata), Yoyo loach

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cypriniformes
Family: Cobitidae
Subfamily: Botiinae
Binomial name: Botia almorhae, Gray, 1831
Other Names: Almorha Loach, Pakistani Loach, Reticulated Loach, Y-Loach

Origin: North and NE India, Bangladesh
Adult Size: 3-5 inches (7 - 13 cm)
Social: Active, generally peaceful
Tank Level: Bottom dweller
Minimum Tank Size: 20 gallon
Diet: Omnivore, eats most foods
Breeding: Egglayer
Care: Intermediate
pH: 6.5 - 7.5
Hardenss: to 12 dGH
Temperature: 75-86 F (24-30 C)

Description:

Ever wonder how the Yo Yo loach got its name? If you haven't already spotted it, you'll slap your forehead when you notice the pattern of Y's and O's adorning the flanks of this lively loach. The letters are most clear when the loach is young, giving way to a more solidly reticulated pattern as the fish matures.

Both sexes are similar. However, males are generally more slender than the females, who become noticeably fat when full of eggs. Males also may show a red color around the barbels.

The mouth of the Yo Yo loach points downward, and sports four pair of barbels. When excited it's coloration can fade out, and it is not unusual for it to play dead, much like it's cousin the Clown loach. The Yo Yo has great character, and has been known to recognize, and become excited, when seeing it's owner.

Another interesting behavior exhibited by the Yo Yo loach, is the clicking sound it makes when feeding on the surface. It does so by swallowing air and forcing it through the gills.

Habitat/Care:

The Yo Yo loach hails from still waters in India and Pakistan, and prefers warm, soft, acidic water. Perform frequent water changes, and keep the lighting subdued.

Keep a shoal of at least three, preferably more. Do not keep them with large or aggressive tankmates. Other small catfish, or small peaceful fish are suitable companions for Yo Yos. Provide them with plenty of places to hide, preferably ones that are not too roomy, as they prefer snug fitting places.

When first introduced to the tank, Yo Yos are nervous and may hide. Once acclimated, they will spend more time in the open. They are most active at night, and enjoy borrowing into the substrate. If you think you are missing one, don't be supervised if you find it hiding in the gravel

Diet:

Yoyo loaches are easy to feed. They'll eat almost anything they are offered, from flake to frozen to freeze dried foods. A few sinking pellets fed just before turning the lights out, will quickly be devoured.

They are peculiarly fond of live foods, and will gorge themselves on bloodworms and brine shrimp. They also will consume any snails they find in the tank, sucking them right out of their shells. To maintain good health, provide a variety of foods.

Breeding:

Although they have not been bred in captivity, it is not unusual for mature females to fill with eggs.

Animalia. Chordata. Actionpterygii. Cypriniformes. Cyprinidae

Family description

Temporal range: Eocene - Present

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Superclass: Osteichthyes
Class: Actinopterygii
Subclass: Neopterygii
Infraclass: Teleostei
Superorder: Ostariophysi
Order: Cypriniformes
Superfamily: Cyprinioidea
Family: Cyprinidae
Subfamilies

- Acheilognathinae
- Cultrinae
- Cyprininae
- Danioninae
- Gobioninae
- Hypophthalmichthyinae
- Labeoninae (disputed)
- Leuciscinae
- Psilorhynchinae
- Rasborinae (polyphyletic?)
- Squaliobarbinae (disputed)
- Tincinae

The family Cyprinidae, from the Ancient Greek kyprînos (κυπρῖνος, "carp"), consists of the carps, the true minnows, and their relatives (for example, the barbs and barbels). Commonly called the carp family or the minnow family, its members are also known as cyprinids. It is the largest family of fresh-water fish, with over 2,400 species in about 220 genera. The family belongs to the order Cypriniformes, of whose genera and species the cyprinids make up two-thirds.[1]

Following the discovery that the relatively unknown mountain carps are a peculiar lineage of cyprinids, they have been included tentatively as subfamily Psilorhynchinae.[2]

Description

Cyprinids are stomachless fish and the jaws are toothless. Food can be effectively chewed by the gill rakers of the specialized last gill bow. These pharyngeal teeth allow the fish to make chewing motions against a chewing plate formed by a procession of the skull. The pharyngheal teeth are species specific and are used by specialists to determine the species. Strong pharyncheal teeth allow fish like the common carp and ide to eat hard baits like snails and bivalves.

Hearing is a well-developed sense, since the cyprinds have the Weberian organ, three specialized vertebra processions that transfer motion of the gas bladder to the inner ear. This construction is also used to observe motion of the gas bladder due to atmospheric conditions or depth changes. The cyprinids are physostomes because the pneumatic duct is retained in adult stages and the fish are able to gulp air to fill the gas bladder or they can dispose excess gas to the gut.

The fish in this family are native to North America, Africa, and Eurasia. The largest cyprinid in this family is the Giant Barb (Catlocarpio siamensis), which may grow up to 3 metres (9.8 ft). The largest North American species is the Colorado Pikeminnow (Ptychocheilus lucius), of which individuals up to 6 feet (1.8 m) long and weighing over 100 pounds (45 kg) have been recorded.

On the other hand, many species are smaller than 5 centimetres (2.0 in). As of 2008, the smallest known freshwater fish is a cypriniform, Danionella translucida, reaching 12 millimetres (0.47 in) at the longest.[3] All fish in this family are egg-layers and most do not guard their eggs, however, there are a few species that build nests and/or guard the eggs. The bitterling-like cyprinids (Acheilognathinae) are notable for depositing their eggs in bivalve molluscs, where the young grow up until able to fend for themselves.

Proud angler with 17 kg Mirror Carp (Cyprinus carpio)

Most cyprinids feed mainly on invertebrates and vegetation probably due to the lack of teeth and stomach, but some species like the Asp specialize in fish. Many species ide, common rudd will eat small fish however when reaching a certain size. Even small species like the moderlieschen eat larvae of the common frog in artificial circumstances.

Some fishes, such as the grass carp, are specialized in eating vegetation, some, such as the common nase, eat algae from hard surfaces, some, such as the black carp, specialize in snails, and some, such as the silver carp, are specialized filter feeders. For this reason, they are often introduced as a management tool to control various factors in the aquatic environment, such as aquatic vegetation and diseases transmitted by snails.

Relationship with humans

Cyprinids are highly important food fish; they are fished and farmed across Eurasia. In land-locked countries in particular, cyprinids are often the major species of fish eaten because they make the largest part of biomass in most water types except for fast flowing rivers. In non-landlocked countries they are not very much appreciated due to the high number of bones. In Eastern Europe they are often prepared with traditional methods like drying and salting. The prevalence of inexpensive frozen fish products made this less important now than it was in earlier times. Nonetheless, in certain places they remain popular for food as well as recreational fishing, and have been deliberately stocked in ponds and lakes for centuries for this reason.[4]

Cyprinids are popular for angling especially for match fishing (due to their dominance in biomass and numbers) and fishing for common carp because of its size and strength.

Several cyprinids have been introduced to waters outside their natural range to provide food, sport, or biological control for some pest species. The Common Carp (Cyprinus carpio) and the Grass Carp (Ctenopharyngodon idella) are the most important of these, for example in Florida. In some cases, these have become invasive species that compete with native fishes or disrupt the environment. Carp in particular can stir up sediment, reducing the clarity of the water and making it difficult for plants to grow.[5]

Numerous cyprinids have become important in the aquarium hobby, most famously the Goldfish, which was bred in China from the Prussian Carp (Carassius (auratus) gibelio). First imported into Europe around 1728, it was much fancied by Chinese nobility as early as 1150 AD and after it arrived there in 1502, also in Japan. In the latter country, from the 18th century onwards the Common Carp was bred into the ornamental variety known as koi – or more accurately nishikigoi (錦鯉), as koi (鯉) simply means "Common Carp" in Japanese.

Other popular aquarium cyprinids include danionins, rasborines and true barbs.[6] Larger species are bred by the thousands in outdoor ponds, particularly in Southeast Asia, and trade in these aquarium fishes is of considerable commercial importance. The small rasborines and danionines are perhaps only rivalled by characids and poecilid livebearers in their popularity for community aquaria.

One particular species of these small and undemanding danionines is the Zebrafish (Danio rerio). It has become the standard model species for studying developmental genetics of vertebrates, in particular fish.[7]

Habitat destruction and other causes have reduced the wild stocks of several cyprinids to dangerously low levels; some are already entirely extinct. In particular, Leuciscinae from southwestern North America have been hit hard by pollution and unsustainable water use in the early-mid 20th century; most globally extinct Cypriniformes species are in fact Leuciscinae from the southwestern United States and northern Mexico.

Systematics

The massive diversity of cyprinids has so far made it difficult to resolve their phylogeny in sufficient detail to make assignment to subfamilies more than tentative in many cases. It is obvious that some distinct lineages exist – for example, Cultrinae and Leuciscinae, regardless of their exact delimitation, are rather close relatives and stand apart from Cyprininae –, but the overall systematics and taxonomy of the Cyprinidae remain a subject of considerable debate. A large number of genera are incertae sedis, too equivocal in their traits and/or too little-studied to permit assignment to a particular subfamily with any certainty.[8]

Part of the solution seems that the delicate rasborines are the core group, consisting of minor lineages that have not shifted far from their evolutionary niche, or have co-evolved, for millions of years. These are among the most basal lineages of living cyprinids. Other "rasborines" are apparently distributed across the diverse lineages of the family.[9]

The validity and circumscription of proposed subfamilies like Labeoninae or Squaliobarbinae also remains doubtful, although the latter do appear to correspond to a distinct lineage. The sometimes-seen grouping of the large-headed carps (Hypophthalmichthyinae) with Xenocypris, on the other hand, seems quite in error. More likely, the latter are part of the Cultrinae.[9]

The entirely paraphyletic "Barbinae" and the disputed Labeoninae might be better treated as part of the Cyprininae, forming a close-knit group whose internal relationships are still little known. The small African "barbs" do not belong in Barbus sensu stricto – indeed, they are as distant from the typical barbels and the typical carps (Cyprinus) as these are from Garra (which is placed in the Labeoninae by most who accept the latter as distinct) and thus might form another as of yet unnamed subfamily. However, as noted above, how various minor lineages tie into this has not yet been resolved; therefore such a radical move, though reasonable, is probably premature.[10]

The Tench (Tinca tinca), a significant food species farmed in western Eurasia in large numbers, is unusual. It is most often grouped with the Leuciscinae, but even when these were rather loosely circumscribed, it always stood apart. A cladistic analysis of DNA sequence data of the S7 ribosomal protein intron 1 supports the view that it is distinct enough to constitute a monotypic subfamily. It also suggests that it may be closer to the small East Asian Aphyocypris, Hemigrammocypris, and Yaoshanicus. They would have diverged roughly at the same time from cyprinids of east-central Asia, perhaps as a result of the Alpide orogeny that vastly changed the topography of that region in the late Paleogene, when their divergence presumably occurred.[2]

Balantiocheilos melanopterus. Bala (Colourful) shark.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cypriniformes
Family: Cyprinidae
Genus: Balantiocheilos
Species: B. melanopterus
Binomial name: Balantiocheilos melanopterus (Bleeker, 1851)

The Bala shark, Balantiocheilos melanopterus, also known as the tricolor shark, silver shark, or shark minnow, is a fish species of the family Cyprinidae, and is one of the two species in the genus Balantiocheilos. This species is not a true shark, but is commonly called a "shark" because of its torpedo-shaped body and large fins.

Overview

The Bala shark occurs in the Mekong and Chao Phraya River basins, Malay Peninsula, Sumatra, and Borneo. These fish have a silver body with black margins on their dorsal, caudal, anal, and pelvic fins.They have big eyes to see better to catch their prey. The Bala shark will grow to a maximum length of 12 inches but takes a long time to do so. Bala sharks are found in midwater depths in large and medium-sized rivers and lakes. They feed on phytoplankton, but mostly on small crustaceans, rotifers, and insects and their larvae.[2]

In the aquarium

Bala sharks are popular aquarium fish.[3] These fish are generally peaceful and good companions to many other types of tropical fish.[3] The nickname "shark" is used because of their torpedo shaped bodies and long fins. They are not actual sharks. Bala sharks are widely available in most pet stores, but these fish may grow to a size too large for the home aquarium. Also the bala shark is a jumper fish and may injure itself on the lid of a tank.[3]

They are a hardy fish that will tolerate temperature changes, pH changes, and other factors to which other fish may be sensitive. The water pH should be 6.0–8.0. The preferable water hardness for this species is soft to medium (5.0–12.0 dGH). Water temperature should be kept between 22–28°C (72–82°F).[2] The Bala shark prefers be kept in groups of two or more specimens (although they can survive alone).[2] These fish require a covered aquarium as they are very skilled jumpers.[3]

Very young Bala sharks are sometimes kept in small aquaria. However, given their adult size, schooling behavior, and swimming speed, the fish quickly grow to need much more room. Hobbyists continue to debate over acceptable minimum tank sizes, but generally recommend at least a 6 foot tank. FishBase lists a minimum of 150 cm (5 ft).[2] Many believe the fish is simply too large and too active to be kept in commercial aquaria at all; only enormous, custom-built tanks are acceptable, if any tank at all is. Indoor ponds are also considered feasible housing options and may be better suited to the average aquarist. This fish's habitat is often destroyed, making these fish rare in the wild.

B. melanopterus is listed as an endangered species by the IUCN Red List.[1] It has become rare or extinct in many river basins of its native range.[2] In Danau Sentarum (Borneo), fishermen already reported in 1993 and 1995 that the populations have decreased dramatically after 1975, for no clear reason. Fishermen mentioned overfishing for the aquarium-fish trade or forest fires in 1975 and the resulting pollution as possible causes. The species is apparently extirpated in the Batang Hari basin (Sumatra) and it seems that all individuals of B. melanopterus exported from Indonesia and Thailand by the aquarium-fish trade are captive bred.[4] There really good fish to take care of and maybe we can all work together and keep the species alive.

Crossocheilus siamensis. Siamese algae eater.

Siamese algae eater
Scientific classification
Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cypriniformes
Family: Cyprinidae
Genus: Crossocheilus
Species: C. siamensis
Binomial name: Crossocheilus siamensis
(Smith, 1931)

Overview

The Siamese algae eater (SAE), Crossocheilus siamensis, is a species of freshwater fish in the carp family, Cyprinidae. This bottom-dwelling tropical fish is found in mainland Southeast Asia that includes the Chao Phraya and Mekong basins as well as the Malay Peninsula. Their natural habitats are streams and rivers as well as flooded forests during the rainy season. The Siamese algae eater should not be confused with the Flying fox (Epalzeorhynchos kalopterus) or the False siamensis (Garra cambodgiensis).

The Siamese algae eater (Epalzeorhynchos siamensis or Crossocheilus siamensis) has a black horizontal stripe extending from opercle to tail. The genuine Epalzeorhynchos siamensis alias Crossocheilus siamensis without maxillary barbels and with deeply fringed V-shaped upper lip is rarely encountered in the aquarium trade.

Closely related is the Red-algae eater Crossocheilus langei, a species that is widely sold as the Siamese algae eater. It has a bright brownish elongate body with a slightly flat belly. It has a prominent brown-black horizontal stripe extending from nose to tail. This fish may grow up to the length of 16 centimeters. It possesses small maxillary barbels and an unfringed shallowly arcuate upper lip. Two other similar species are traded as Siamese algae eaters, namely Crossocheilus atrilimes, a species that likes to eat Java moss rather than red algae, and an undescribed species of Crossocheilus.

It is a slender, grayish-brown fish with a distinctive black horizontal stripe. Maximum length is 15 cm (6") and might be obtained in two years, if the conditions are optimal. Normally They grow slower and don't always reach that size in captivity. They can live over 10 years. All the fins are transparent or slightly milky without any yellow or reddish sheen. The black band goes from nose to the fork of the tail and its edges are zig-zagged. When a fish is stressed or fighting the black color fades significantly. Underparts are silvery white and there is no light stripe over the black, but the whole upper body is brownish and every scale has a dark edge, which make the top look reticular. Some dark scale edges might be seen under the black stripe. It has a pair of thin, forward-pointing barbels but they might be pressed against the cheeks when fish is swimming or resting. The long black stripe is also easy to see in young fishes, but the scale edge pattern and zig-zag edges are not clearly visible until the fish reaches the length of 5-7 cm (2-3"); the ones that are normally seen in European shops are about 3-5 cm (1-2") long. Adult females are often slightly fatter than males, no other sexual differences are known.

Behavior

It is an active and fast swimmer, which thrives best in schools but can also be kept alone or in pairs. It is a strong jumper and should not be kept in uncovered tank, because it will eventually jump. Siamese Algae Eaters often chase one another but they never get hurt in these fights.

The fish is a good jumper. The lid of the tank should be properly closed leaving no large hole for the fish to jump out of the tank.

Siamese Algae Eaters will often school together, but are also content living solo. When two are kept together, they will often establish their own territory as they mature. They can be a long-lived fish, ten years experienced.

C. siamensis has a peculiar resting position: it doesn't lie flat on its belly but keeps its body propped up with its tail, pelvic and pectoral fins. Young fish sometimes rest on broad leaves, adult specimens prefer resting on bottom or dense, low plants like Cryptocorynes. The swim bladder is not very developed, so the fish can't stay in midwater but it must be in constant motion or it sinks.

Compatibility

As they are not aggressive, they can be kept in any community tank big enough. Their active behavior might stress some sensitive species like dwarf cichlids and prevent them from spawning. They should not be kept with Red-tailed Sharks (Epalzeorhynchus bicolor) unless the aquarium is large and well planted, because that species is very aggressive towards all its relatives.

Aquarium care

They prefer water temperature range of 24–26°C, a pH range of 6.5-8.0, and a water hardness of 5-20 dH. Because the red algae eaters are effective at controlling the tank algae, many aquarists like to place them in heavily-planted tanks with strong lightings that promote the growth of algae. Unlike other aquarium algae eater fishes, the red algae eater is valued for its ability to eat red algae. The fish, however, are opportunistic feeders and will eat pellets and most other food, a tendency that strengthens with age.

Hardness should be less than 20 dH. Water should be clean and oxygenated, because they come from bright and fast-flowing streams. They eat algae, including red algae and all kind of live and prepared foods. It is very rare that they harm plants in their tank if they are given enough green food. They also eat algae when they are mature, but seem to prefer flake food. Liisa's fish eat Duckweed (Lemna minor) but have never touched any other plants. They haven't yet been bred in captivity, so all the specimens are caught from nature. It appears that the fish are seasonal and are not always available in the shops. Minimum tank size for a pair of adult Siamese Algae Eaters is 100 liters (25 gallons). The aquarium should be long and have lots of living plants.

Animalia. Chordata. Actinopterygii. Cyprinodontiformes. Poeciliidae.

Family description

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cyprinodontiformes
Family: Poeciliidae, Garman, 1895

Poeciliidae is a family of fresh-water fish which are live-bearing aquarium fish (they give birth to live young). They belong to the order Cyprinodontiformes, tooth-carps, and include well-known aquarium fish like the guppy, molly, platy, and swordtail. The original distribution of the family was South eastern United States to North of Rio de la Plata Argentina, and central and southern Africa, including Madagascar. However, due to release of aquarium specimens and the widespread use of species of the genera Poecilia and Gambusia for mosquito control, poeciliids can today be found in all tropical and subtropical areas of the world.

Live-bearing

Although the whole family Poeciliidae is known as "live bearers", there are egg-scattering species with external fertilization in addition to the true live-bearing “viviparous” and "ovoviviparous" species, which have internal fertilization and the eggs hatch before being laid, so that the female gives birth to live young. All African species are egg-layers, and (with the exception of the members of the genus Tomeurus) all American species are livebearers. This distribution suggests that Poeciliidae predate the split between Africa and South America 100 million years ago, that live-bearing subsequently evolved in South America. Poeciliids colonized north America through the Antilles while they were connected 44 million years ago. Poeciliids then moved to central America by the Aves land bridge. When south America reconnected to central America 3 million years ago there was some dispersal southward, but South American species did not move into central America.[1]

Among the live-bearing species there are differences in the mode and degree of support the female gives the developing larvae; although many members of the family Poeciliidae are considered to be lecithotrophic (meaning that the mother provisions the oocyte with all the resources it needs prior to fertilization, so that the egg is independent of the mother), but others are matrotrophic (literally means "mother feeding": the mother provides the majority of resources to the developing offspring after fertilization).

Members of the genus Poeciliopsis, for example, show variable reproductive life history adaptations. Poeciliopsis monacha, P. lucida, and P. prolifica form part of the same clade within the genus Poeciliopsis. However, their modes of maternal provisioning vary greatly. P. monacha can be considered to be lecithotrophic because it does not really provide any resources for its offspring after fertilization - the pregnant female is basically a swimming egg sac. P. lucida shows an intermediate level of matrotrophy, meaning that to a certain extent the offspring's metabolism can actually affect the mother's metabolism, allowing for increased nutrient exchange. Poeciliopsis prolifica is considered to be highly matrotrophic, and almost all of the nutrients and materials needed for fetal development are supplied to the oocyte after it has been fertilized. This level of matrotrophy allows Poeciliopsis to carry several broods at different stages of development, a phenomenon known as superfetation. Because the space for developing embryos is limited, viviparity reduces brood size. Superfetation can compensate for this loss by keeping embryos at various stages and sizes during development.

Poeciliopsis elongata, P. turneri, and P. presidionis form another clade which could be considered an outgroup to the P. monacha/P.lucida/P.prolifica clade. These three species are very highly matrotrophic - so much so that in 1947 C. L. Turner described the follicular cells of P. turneri as "pseudo-placenta, pseudo-chorion, and pseudo-allantois".

Poecilia reticulata. Guppy

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cyprinodontiformes
Family: Poeciliidae
Genus: Poecilia
Species: P. reticulata
Binomial name
Poecilia reticulata, Peters, 1859
Synonyms

- Acanthocephalus guppii
- A. reticulatus
- Girardinus guppii
- G. petersi
- G. poeciloides
- G. reticulatus
- Haridichthys reticulatus
- Heterandria guppyi
- Lebistes poecilioides
- L. reticulatus
- Poecilia poeciloides
- Poecilioides reticulatus

The guppy (Poecilia reticulata), also known as the millionfish,[1] is one of the most popular freshwater aquarium fish species in the world. It is a small member of the Poeciliidae family (females 4–6 centimetres (1.6–2.4 in) long, males 2.5–3.5 centimetres (1.0–1.4 in) long) and like all other members of the family, is live-bearing.

Distribution

Guppies are native to Antigua and Barbuda, Barbados, Brazil, Guyana, Netherlands Antilles, Trinidad and Tobago, the U.S. Virgin Islands and Venezuela.[3][4]

However, guppies have been introduced to many different countries on all continents, except Antarctica. Sometimes this has occurred accidentally, but most often as a means of mosquito control, the hope being that the guppies would eat the mosquito larvae slowing down the spread of malaria. In many cases, these guppies have had a negative impact on native fish faunas.[5]

[edit] Ecology and behavior

Guppies exhibit sexual dimorphism. While wild-type females are grey in body colour, males have splashes, spots, or stripes that can be any of a wide variety of colors.

Reproduction

Guppies are highly prolific livebearers.[6] The gestation period of a guppy is 21–30 days, with an average of 28 days, varying according to water temperature. Males possess a modified tubular anal fin called a gonopodium located directly behind the ventral fin which is flexed forward and used as a delivery mechanism for one or more balls of spermatozoa. The male will approach a female and will flex his gonopodium forward before thrusting it into her and ejecting these balls. After the female guppy is inseminated, a dark area near the anus, known as the gravid spot, will enlarge and darken. Just before birth, the eyes of fry may be seen through the translucent skin in this area of the female's body. When birth occurs, individual offspring are dropped in sequence over the course of an hour or so.

Guppies prefer water temperatures of about 26 °C (79 °F) for reproduction. The female guppy has drops of between 2–50 fry at a time, typically ranging between 5 and 30. After giving birth, the female is ready for conception again within only a few hours. Guppies have the ability to store sperm up to a year, so the females can give birth many times without depending on the presence of a male. From the moment of birth, each fry is fully capable of swimming, eating, and avoiding danger. If not kept separate, the older, mature guppies will eat the fry so the use of a breeder box, net breeder, or a separate 20–40 litres (4–9 imp gal; 5–11 US gal) tank is recommended. Live plants may be used as hiding places for the fry.

Young fry take roughly three or four months to reach maturity. In the aquarium, they are usually fed finely ground flake foods, baby brine shrimp or, unless they are put in a separate tank, uneaten food from the adults. In addition, they nibble on algae.

Guppies have been selectively bred to produce a variety of colors and patterns. In the wild, male guppies are dull black or brown in colour with some coloured spots while females are fully dull grey. The wild guppies that showed the most colours in each generation were bred to produce the "fancy guppies" seen in pet stores and guppy shows today.

The guppy has been successfully hybridised with various species of molly (Poecilia latipinna/velifera), eg. male guppy and female molly. However, the hybrids are always males and appear to be infertile.[7] The guppy has also been hybridised with the Endler's livebearer (Poecilia wingei) to produce fertile offspring.

Genetics

Guppies have 23 pairs of chromosomes including 1 pair of sex chromosomes.[8]

Selective breeding has produced many different strains, such as the snakeskin and grass varieties. A strain is defined as guppies that show the same characteristics.

In the aquarium

The guppy prefers a hard water aquarium and can withstand levels of salinity up to 150% that of normal sea water,[9] which has led to them being occasionally included in marine tropical community tanks, as well as in freshwater tropical tanks. Guppies are generally peaceful, though nipping behaviour is sometimes exhibited between male guppies or towards other top swimmers like platys and swordtails and occasionally other fish with prominent fins such as angelfish. Its most famous characteristic is its propensity for breeding, and it can breed in both fresh water and marine aquariums.[10]

Guppies bred by aquarists produced variations in appearance ranging from colour consistency to various tail forms.

Well-fed adults do not often eat their own young, although sometimes safe zones are required for the fry. Specially designed livebearer birthing tanks, which can be suspended inside the aquarium, are available from aquatic retailers. These also serve to shield the pregnant female from further attention from the males, which is important, because the males will sometimes attack the females while they are giving birth. It also provides a separate area for the newborn young as protection from being eaten by their mother. However, if a female is put in the breeder box too early, it may cause her to have a miscarriage. Well-planted tanks that offer a lot of barriers to adult guppies will shelter the young quite well. Java moss, duckweed (Lemna minor and other Lemna species), and Water Wisteria are all excellent choices. A continuous supply of live food, such as Daphnia, will keep adult fish full and may spare the fry when they are born.

Xiphophorus maculatus. Platy.

Scientific classification

Scientific Name: Xiphophorus maculatus
Other Names:Golden Moon Platy, Moonfish, Common Platy
Family: Poeciliidae
Origin: Guatemala, Honduras, Mexico
Adult Size: 1 - 2 inches (3.5 - 5 cm)
Social: Peaceful, suitable for community tank
Tank Level: Mid dweller
Minimum Tank Size: 5 gallon
Diet: Omnivore, eats most foods
Breeding: Livebearer
Care: Easy
pH: 7.0 - 8.2
Hardenss: 10-25 dGH
Temperature: 64-77 F (18-25 C)

Description

Believe it or not, everyone doesn't immediately see where this fish gets its name. Look closely at the tail area, and it will soon become obvious. Near the base of the tail is a large round spot upon which are perched two smaller round 'ears' that give it the spitting image of the popular Disney character, Mickey Mouse.

The fish itself may be pale yellow to gold, red to orange, or even bluish in color. The fins may range from pale yellow to red or black tinged. Despite the color variations, all are the same species of fish.

Like all live bearing fish, males and females exhibit sexual dimorphism, meaning males and females have externally visible physical differences. Females are generally larger, and sometimes are less vibrantly colored than the male. Males are easily recognized by the presence of the gonopodium.

Habitat/Care

Like other platys the Mickey Mouse Platy tolerate a wide range of conditions, and are suitable for even small aquariums. They will graze on vegetation, so keep that in mind if you have live plants. The ideal substrate is small to medium sized and darker in color, which also servers as a good contrast to show off the pretty colors of this fish

Water conditions are not critical. Alkaline water of moderate hardness is ideal, which is very similar to most city tap water. The temperate of a typical community tank, 76-78 degrees F, will do quite nicely for the Mickey Mouse Platy.

Diet

Virtually any food will be accepted by the Mickey Mouse Platy, including the standard flake foods. A varied diet including plenty of vegetable matter, will insure good health. Fresh produce such as lettuce, spinach, cooked peas or zucchini, will be readily accepted. In lieu of fresh veggies, try spirulina.

Live foods, such as brine shrimp, glassworms and bloodworms, are a good supplement. Frozen or freeze dried varieties of the same foods are a good alternative.

Breeding

The Mickey Mouse Platy is sexually mature as early as four months of age, which means young fish should be sexed and seperated when they are very young. Female platys who mate will retain sperm packets and can continue to give birth without mating again for a number of months

Once mating has occured, and the eggs are fertilized, it takes about 30 days for the fry to emerge. The temperature can slow down or speed up the process (warmer water shortens the gestation period). Typical broods are 40-60 fry, which are born live.

As the fry develop, the belly of the female will become larger. Eventually the eyes of the fry can be seen through the stretched belly of the mother. As birthing time draws near, you should be prepared to shelter and protect the fry. Otherwise the parents, and any other fish in the tank, will eat most, if not all of them.

One option is to place female in a breeding trap just before birth. The trap is designed so the fry fall through slits that are too small for the mother to follow. The negatives of this is that the small trap is stressful for the mother, and must be done before she begins giving birth.

Another method is to have a separate birthing/nursery tank that is heavily planted with fine leafed vegetation. As the fry are born, they hide in the plants. Once the mother had given birth to all her fry, she is removed, thus protecting the fry.

The fry are fully formed very tiny fish. Initially they need very fine foods to feed upon. Freshly hatched brine shrimp are ideal, but liquid or powdered fry food will do fine. Feedings are required several times per day, which means debris will build up more quickly in the tank, thus requiring daily water changes.

Xiphophorus hellerii. Green Swordtail.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Cyprinodontiformes
Family: Poeciliidae
Genus: Xiphophorus
Species: X. hellerii

Binomial name: Xiphophorus hellerii, Heckel, 1848

Common Names : Black Swordtail, Gold Tux, Green, Lyretail, Neon, Red Simpson, Spotted, Red Velvet Swordtails, Black Velvet, Belize, Atoyac

It is often designated X. helleri (with one "i"), but authorities consider this an orthographic error and the spelling with two "i"s is the valid specific epithet. Due to interbreeding with the southern platyfish or "platy," most "swordtail" in the aquarium are hybrids to some degree.

Overview

Swordtail Care Level : Easy, good fish for freshwater fish beginners

Size : Up to 5 inches (13 cm)

pH : 7 - 8

Temperature : 72°F - 82°F (22°C - 28°C)

Water Hardness : 9° to 15° dH,

Lifespan : 3 - 5 years

Origin / Habitat : Central America

Temperament / Behavior : The swordtail is a tough litte fish. They can take care of themselves when there are bigger fish in the tank. The males may become aggressive towards other males.

Breeding / Mating / Reproduction : They are livebearers, so it is fairly easy for them to breed. Be sure to give a lot of floating cover for the baby swords. Try to put the babies in a separate tank otherwise the adult fish will eat them. Check out this breeding swordtails article for more information.

Tank Size : 10 gallon or larger

Compatible Tank Mates : Don't keep with tropical fish big enough to eat them. They should be able to handle themselves with many fish their same size or larger.

Fish Disease : Freshwater Fish Disease - Diagnose, Symptoms and Treatment

Diet / Fish Food : Omnivore but they need some greens in their diet. They will take flake, freeze dried and live foods. On a daily basis, flakes are usually recommended. Once a week, feed them live foods like bloodworms or brine shrimps. They will also eat algae tablets.

Xiphophorus Helleri is closely related to Xiphophorus Maculatus (Platy).

Tank Region : All over the tank

Gender : Easy to determine - the male has a signature long anal fin.

The Green swordtail (Xiphophorus hellerii) is a species of freshwater fish in family Poeciliidae of order Cyprinodontiformes. A live-bearer, it is closely related to the southern platyfish or "platy" (X. maculatus) and can crossbred with it. It is native to an area of North and Central America stretching from Veracruz, Mexico, to northwestern Honduras.

The male green swordtail grows to a maximum overall length of 14cm (5.5in) and the female to 16 cm (6.3 in). The name "swordtail" is derived from the elongated lower lobe of the male's caudal fin (tailfin). Sexual dimorphism is moderate, with the female being larger than the male but lacking the "sword". The wild form is olive green in color, with a red or brown lateral stripe and speckles on the dorsal and, sometimes, caudal fins.

The male's "sword" is yellow, edged in black below. Captive breeding has produced many color varieties, including black, red, and many patterns thereof, for the aquarium hobby.

The green swordtail prefers swift-flowing, heavily-vegetated rivers and streams, but is also found in warm springs and canals. Omnivorous, its diet includes both plants and small crustaceans, insects, and annelid worms.

X. hellerii has become a nuisance pest as an introduced species in a number of countries. It has caused ecological damage because of its ability to rapidly reproduce in high numbers. Feral populations have established themselves in southern Africa, including Natal, Madagascar and eastern Transvaal in South Africa and Otjikoto Lake in Namibia. Significant populations have also established themselves along the east coast of Australia. One of the most popular tropical aquarium fish, the green swordtail has been bred into various hybrid forms for the aquarium hobby due to its hardiness and suitability for community tanks.

The males' beautiful elongated caudal fins have been found to significantly affect their chances at mating. The presence of a well-endowed male spurs the maturity of females while it inhibits the maturity of juvenile males in the vicinity of the well-endowed male

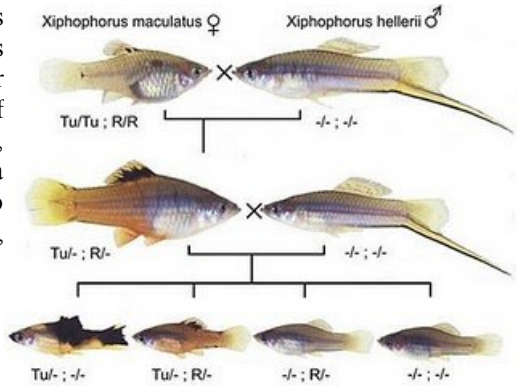
Breading

Swordtails are livebearers, which means they give birth to already formed fry. There are a few ways to differentiate males from females. The first and most obvious is to look at the tail of the fish. If it is long and in shape of a sword, it is a male. However, when young, this diphormism is not always obvious and male Swordtails are well known to be late developpers. The presence of a gonopodium in the male species is another way to tell males from females. Gonopodiums are extension of the anal fin rays that the male uses to fertilize the female. Females, in conterpart, have a gravid patch at the end of their belly right under the anal fin. This patch gets bigger as she gets ready to give birth. Fermales are also usually bigger than males. It's been said that females can sometimes change sex after breeding a few times. Opinions are divided on this subject. I actually have had a few females that changed sex after after a while but I'm not sure if they were actual females or really late developping males. Some hobbyist also believe that females become males when there is a male shortage. All these facts remain to be proven.

Xiphophorus Helleri is one of the easiest tropical fish to breed. Females can give birth to 3 to 6 batchs of fry with only one fertilization (20 to 80 fry every time - spawning is approx. 2 hours long). A happy female will give birth every 4 to 6 weeks and the gestation period last approximately 3 to 4 weeks. It is a very prolific fish.

Swordtails will breed in pretty much any kind of water. They usually prefer hard and alcalin water and do very good in our municipal tap waters. As soon as the female give birth, remove the parents from the tank as they would eat the fry. The best way is to have a small tank ready for the fry to be isolated. This tank will have a small sponge filter, hidding places and java moss/plants. If the parents can not be removed from the tank, make sure to have a lot of Java Moss and hidding places for the fry to hide from their parents/other fish. Feed the fry with crushed flakes and do water changes on a regular basis, this will help the youngs to grow rapidly.

As a curiosity, Xiphophorus helleri and Xiphophorus maculates (platy female and xipho male) can cross as shown. Xipho's original form is green, so-called "green swordtail", but after repeated selctions appeared more color varieties (about 1000) of which recall the most common: xipfo red, red with red eyes, xipfo yellow, xipfo wagtail (black tail), red rot (golden tail and a golden longitudinal stripe on the body), red gold, red Tuxedo (halh black and half red), berliner (one color with black dots), xipfo neon, xipfo schwarz, rot albino, doppel, etc..



Animalia. Chordata. Actinopterygii. Perciformes. Cichlidae.

Family description

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Perciformes
Suborder: Labroidei
Family: Cichlidae, Heckel, 1840
Subfamilies

- Astronotinae
- Cichlasomatinae
- Cichlinae
- Etroplinae
- Geophaginae
- Heterochromidinae
- Paratilapiinae
- Pseudocrenilabrinae
- Ptychochrominae
- Retroculinae

Cichlids (play /ˈsɪklɪd/) are fishes from the family Cichlidae in the order Perciformes. Cichlids are members of a group known as the Labroidei along with the wrasses Labridae, damselfish Pomacentridae, and surfperches Embiotocidae.[1] This family is both large and diverse. At least 1,300 species have been scientifically described, [2] making it one of the largest vertebrate families. New species are discovered annually, and many species remain undescribed. The actual number of species is therefore unknown, with estimates varying between 1,300 and 3,000.[3]

Description

Cichlids span a wide range of body sizes, from species as small as 2.5 centimeters (1 in) in length (e.g., female Neolamprologus multifasciatus) to much larger species approaching 1 meters (3 ft) in length (e.g. Boulengerochromis and Cichla). As a group, cichlids exhibit a similar diversity of body shapes, ranging from strongly laterally compressed species (such as Altolamprologus, Pterophyllum, and Symphysodon) to species that are cylindrical and highly elongate (such as Julidochromis, Teleogramma, Teleocichla, Crenicichla, and Gobiocichla).[4] Generally, however, cichlids tend to be of medium size, ovate in shape and slightly laterally compressed, and generally similar to the North American sunfishes in morphology, behavior, and ecology.[5]

Many cichlids, particularly tilapia, are important food fishes, while others are valued game fish (e.g. Cichla species). The family also includes many familiar aquarium fish, including the angelfish, oscars, and discus.[4][6] Cichlids have the largest number of endangered species among vertebrate families, most in the haplochromine group.[7] Cichlids are particularly well known for having evolved rapidly into a large number of closely related but morphologically diverse species within large lakes, particularly Tanganyika, Victoria, Malawi, and Edward. [8][9] Their diversity in the African Great Lakes is important for the study of speciation in evolution.[10] Many cichlids that have been introduced into waters outside of their natural range have become nuisances, such as tilapia in the southern United States.[11]

Anatomy and appearance

Cichlids share a single key trait: the fusion of the lower pharyngeal bones into a single tooth-bearing structure. A complex set of muscles allows the upper and lower pharyngeal bones to be used as a second set of jaws for processing food, allowing a division of labor between the "true jaws" (mandibles) and the "pharyngeal jaws". Cichlids are efficient feeders that capture and process a very wide variety of food items. This is assumed to be one reason why they are so diverse.[4] Cichlids vary in body shape, ranging from compressed and disc-shaped (such as Symphysodon), to triangular (such as Pterophyllum), to elongate and cylindrical (such as Crenicichla).

The features that distinguish them from the other Labroidei include:[2]

- A single nostril on each side of the forehead, instead of two.
- No bony shelf below the orbit of the eye.
- Division of the lateral line organ into two sections, one on the upper half of the flank and a second along the midline of the flank from about halfway along the body to the base of the tail (except for genera Teleogramma and Gobiocichla).
- A distinctively shaped otolith.
- The small intestine's left-side exit from the stomach instead of its right side as in other Labroidei.

Taxonomy

Kullander (1998) recognizes eight subfamilies of cichlids: the Astronotinae, Cichlasomatinae, Cichlinae, Etroplinae, Geophaginae, Heterochromidinae, Pseudocrenilabrinae, and Retroculinae.[13] Cichlid taxonomy is still debated, and classification of genera cannot yet be definitively given. A comprehensive system of assigning species to monophyletic genera is still lacking, and there is not complete agreement on what genera should be recognized in this family.[12]

As an example of the classification problems, Kullander[14] placed the African genus Heterochromis phylogenetically within neotropical cichlids, although later papers concluded otherwise. Other problems center upon the identity of the putative common ancestor for the Lake Victoria superflock, and the ancestral lineages of Tanganyikan cichlids.

Comparisons[15] between a morphologically-based phylogeny[16] and analyses of gene loci[17] produce differences at the genus level. There remains a consensus that the Cichlidae as a family is monophyletic.[18][19]

One problem that transformed cichlid taxonomy is related to dentition, which had been used as a classifying characteristic. In many cichlids, tooth shape changes with age, due to wear, and cannot be relied upon. Genome sequencing and other technologies transformed cichlid taxonomy.[20]

Range and habitat

Tilapia mariae, caught on a hook and line, in Australia. Originally from Africa, the species established feral populations in Australia.[21]

Cichlids are the most species-rich non-Ostariophysan family in freshwaters worldwide. They are most diverse in Africa and South America. It is estimated that Africa alone hosts at least 1,600 species.[12] Central America and Mexico have approximately 120 species, as far north as the Rio Grande in southern Texas. Madagascar has its own distinctive species (Oxylapia, Paratilapia, Paretroplus, Ptychochromis, and Ptychochromoides), only distantly related to those on the African mainland.[2][22] Native cichlids are largely absent in Asia, except for nine species in Israel, Lebanon and Syria (Astatotilapia flaviijosephi, Oreochromis aureus, O. niloticus, Sarotherodon galilaeus , Tilapia zillii, and Tristramella spp.), one in Iran (Iranocichla), and three in India and Sri Lanka (Etroplus).[12] If disregarding Trinidad and Tobago (where the few native cichlids are members of genera that are widespread in the South American mainland), the three species from the genus Nandopsis are the only cichlids from the Antilles in the Caribbean, specifically Cuba and Hispaniola. Europe, Australia, Antarctica, and North America north of the Rio Grande drainage have no native cichlids, although in Florida, Mexico, Japan and northern Australia feral populations of cichlids have become established as exotics.[21][23][24][25][26][27][28]

Although most cichlids are found at relatively shallow depths, several exceptions do exist. These include species such as Alticorpus macrocleithrum and Pallidochromis tokolosh down to 150 metres (490 ft) below the surface in Lake Malawi,[29][30] and the whitish (non-pigmented) and blind Lamprologus lethops, which is believed to live as deep as 160 metres (520 ft) below the surface in the Congo River.[31]

Cichlids are less commonly found in brackish and saltwater habitats, though many species tolerate brackish water for extended periods; Cichlasoma urophthalmus, for example, is equally at home in freshwater marshes and mangrove swamps, and lives and breeds in saltwater environments such as the mangrove belts around barrier islands.[4] Several species of Tilapia, Sarotherodon, and Oreochromis are euryhaline and can disperse along brackish coastlines between rivers.[12] Only a few cichlids, however, inhabit primarily brackish or salt water, most notably Etroplus maculatus, Etroplus suratensis, and Sarotherodon melanotheron.[32] The perhaps most extreme habitats for cichlids are the warm hypersaline lakes where the members of the genera Alcolapia and

Danakilia are found. Lake Abaeded in Eritrea encompasses the entire distribution of D. dinicolai, and its temperature ranges from 29 to 45 °C (84 to 113 °F).[33]

With the exception of the species from Cuba and Hispaniola, cichlids have not reached any oceanic island and have a predominantly Gondwanan distribution, showing the precise sister relationships predicted by vicariance: Africa-South America and India-Madagascar.[34] The dispersal hypothesis, in contrast, requires freshwater cichlids to have negotiated thousands of kilometers of open ocean between India and Madagascar without colonizing any other island or, for that matter, crossing the Mozambique Channel to Africa. Exposure of Malagasy cichlids to saltwater is 100% fatal after 12 hours, however.[35]

Feeding

Many cichlids are primarily herbivores feeding on algae (e.g. Petrochromis) and plants (e.g. Etroplus suratensis). Small animals, particularly invertebrates, are only a minor part of their diet.

Other cichlids are detritivores and eat all types of organic material; among these species are the tilapiines of the genera Oreochromis, Sarotherodon, and Tilapia.

Other cichlids are predatory and eat little or no plant matter. These include generalists that catch a variety of small animals, including other fishes and insect larvae (e.g. Pterophyllum), as well as variety of specialists. Trematocranus is a specialized snail-eater, while Pungu maclareni feeds on sponges. A number of cichlids feed on other fish, either entirely or in part. Crenicichla are stealth-predators that lunge from concealment at passing small fish, while Rhamphochromis are open water pursuit predators that chase down their prey.[37] Paedophagous cichlids such as the Caprichromis species eat other species' eggs or young, in some cases ramming the heads of mouthbrooding species to force them to disgorge their young.[36][38][39][40] Among the more unusual feeding strategies are those of Corematodus, Docimodus evelynae, Plecodus, Perissodus, and Genyochromis spp., which feed on scales and fins of other fishes, a behavior known as lepidophagy,[41][42][43] along with the death-mimicking behaviour of Nimbochromis and Parachromis species, which lay motionless, luring small fish to their side prior to ambush.[44][45]

This variety of feeding styles has helped cichlids to inhabit similarly varied habitats. Its pharyngeal teeth (teeth in the throat) afford cichlids so many "niche" feeding strategies, because the jaws pick and hold food, while the pharyngeal teeth crush the prey.

Reproduction

Cichlids have highly organized breeding activities.

Brood care

All species show some form of parental care for both eggs and larvae, often nurturing free-swimming young until they are weeks or months old.

Communal parental care, where multiple monogamous pairs care for a mixed school of young have also been observed in multiple cichlid species, including Amphilophus citrinellus, Etroplus suratensis, and Tilapia rendalli.[46][47][48] Comparably, the fry of Neolamprologus brichardi, a species that commonly lives in large groups, are protected not only by the adults, but also by older juveniles from previous spawns.[49]

Several cichlids, including discus (Symphysodon spp.), some Amphilophus species, Etroplus and Uaru species feed their young with a skin secretion from mucous glands.[4][50]

Parental care falls into one of four categories:[50] substrate or open brooders, secretive cave brooders (also known as guarding speleophils[51]), and at least two types of mouthbrooders, ovophile mouthbrooders and larvophile mouthbrooders.[52]

Open brooding

Open or substrate brooding cichlids lay their eggs in the open, on rocks, leaves, or logs. Examples of open brooding cichlids include Pterophyllum, Symphysodon spp, and Anomalochromis thomasi. Male and female parents usually engage in differing brooding roles. Most commonly, the male patrols the pair's territory and repels intruders, while females fan water over the eggs, removing the infertile and leading the fry while foraging. However, both sexes are able to perform the full range of parenting behaviours.[52]

Cave brooding

Secretive cave spawning cichlids lay their eggs in caves, crevices, holes, or discarded mollusc shells, frequently attaching the eggs to the roof of the chamber. Examples include Pelvicachromis spp., Archocentrus spp, and Apistogramma spp.[50] Free-swimming fry and parents communicate in captivity and in the wild. Frequently this communication is based on body movements, such as shaking and pelvic fin flicking. In addition, open and cave brooding parents assist in finding food resources for their fry. Multiple neotropical cichlid species perform leaf-turning and fin-digging behaviors.[52]

Ovophile mouthbrooding

Ovophile mouthbrooders incubate their eggs in their mouths as soon as they are laid, and frequently mouthbrood free-swimming fry for several weeks. Examples include many Great Rift Valley lakes (Lake Malawi, Lake Tanganyika and Lake Victoria) endemics, e.g.: Maylandia, Pseudotropheus, and Tropheus, along with some South American cichlids such as Geophagus steindachneri.

Larvophile mouthbrooding

Larvophile mouthbrooders lay eggs in the open or in a cave and take the hatched larvae into the mouth. Examples include some variants of Geophagus altifrons, and some Aequidens, Gymnogeophagus, and Satanoperca.[4][50] Mouthbrooders, whether of eggs or larvae, are predominantly females. Exceptions that also involve the males include eretmodine cichlids (genera Spathodus, Eretmodus, and Tanganicodus), some Sarotherodon species, Chromidotilapia guentheri, and some Aequidens species.[4][52][53] Rare paternal mouthbrooding occurs, for example, in Sarotherodon melanotheron.[54] This method appears to have evolved independently in several groups of African cichlids.[12]

Mating

Cichlids mate either monogamously or polygamously.[4] The mating system of a given cichlid species is not consistently associated with its brooding system. For example, although most monogamous cichlids are not mouthbrooders, Chromidotilapia, Gymnogeophagus, Spathodus and Tanganicodus are all monogamous mouthbrooders. In contrast, numerous open or cave spawning cichlids are polygamous; examples include Apistogramma, Lamprologus, Nannacara and Pelvicachromis.[4][55]

Population status

In 2010, the International Union for Conservation of Nature classified 184 species as vulnerable, 52 as endangered, and 106 as critically endangered.[56] At present, the IUCN "only" lists Yssichromis sp. nov. "argens" as extinct in the wild, and "only" six species are listed as entirely extinct, but it is acknowledged that many more possibly belong in these categories (for example, Haplochromis aelocephalus, H. apogonoides, H. dentex, H. dichrourus and numerous other members of the genus Haplochromis have not been seen since the 1980s, but are maintained as Critically Endangered in the small chance that tiny –but currently unknown– populations survive).[56]

Lake Victoria

Because of the introduced Nile perch (Lates niloticus) and water hyacinth, deforestation that led to water siltation, and overfishing, many Lake Victoria species have been wiped out or drastically reduced. By around 1980, lake fisheries yielded only 1 percent cichlids, a drastic decline from 80 percent in earlier years.[57]

About two-thirds of endemic cichlids (approximately 300 species), especially bottom feeders, became endangered or extinct. Some survivors have adapted by becoming smaller or hybridizing with other species.[57]

Satellite lakes such as Lake Edward and Lake Kyoga have not been as strongly affected, however, and harbor an array of similar species.

Food and game fish

Although cichlids are mostly small- to medium-sized, many are notable as food and game fishes. With few thick rib bones and tasty flesh, artisan fishing is not uncommon in Central America and South America, as well as areas surrounding the African rift lakes.[57]

The most important food cichlids, however, are the tilapiines of North Africa. Fast growing, tolerant of stocking density, and adaptable, tilapiine species have been introduced and farmed extensively in many parts of Asia and are increasingly common aquaculture targets elsewhere.

Farmed tilapia production is about 1,500,000 tonnes (1,480,000 LT; 1,650,000 ST) annually with an estimated value of US$1.8 billion,[59] about equal to that of salmon and trout.

Unlike those carnivorous fish, tilapia can feed on algae or any plant-based food. This reduces the cost of tilapia farming, reduces fishing pressure on prey species, avoids concentrating toxins that accumulate at higher levels of the food chain and makes tilapia the preferred "aquatic chickens" of the trade.[57]

Many large cichlids make good game fish. The strong, hard-fighting peacock bass (Cichla species) of South America is one of the most popular sportfish. It was introduced in many waters around the world. In Florida, this fish generates millions of hours of fishing and sportfishing revenue of more than US$8 million a year.[60] Other cichlids preferred by anglers include the Oscar, Mayan cichlid (Cichlasoma urophthalmus), and jaguar guapote (Parachromis managuensis).[60]

Aquarium fish

Although not particularly hardy, the discus, Symphysodon spp., has been popular among aquarium enthusiasts.

Since 1945, cichlids have become increasingly popular as aquarium fish.[4][50][52][61][62][63][64] Many cichlids are small to medium-sized, easy to feed with a range of prepared fish foods, breed readily, and practice brood care, making good aquarium fish.[50]

The most common species in hobbyist aquaria is Pterophyllum scalare from the Amazon River basin in tropical South America, known in the trade as the "angelfish". Other popular or readily available species include the oscar (Astronotus ocellatus), convict cichlid (Archocentrus nigrofasciatus) and discus (Symphysodon spp.).[4]

Cichlids can be kept in aquaria with other fish; however, many cichlids eat smaller fish.[50] Conversely, some cichlids, such as Apistogramma or Julidochromis spp., can be timid. In such cases the use of dither fish is recommended.[4]

Hybrids and selective breeding

Some cichlids readily hybridize with related species, both in the wild and under artificial conditions.[65] Other groups of fishes, such as European cyprinids, also hybridize.[66] Unusually, cichlid hybrids have been put to extensive commercial use, in particular for aquaculture and aquaria.[6][67] The hybrid red strain of tilapia, for example, is often preferred in aquaculture for its rapid growth. Tilapia hybridization can produce all-male populations to control stock density or prevent reproduction in ponds.[6]

Aquarium hybrids

The most ubiquitous aquarium hybrid is perhaps the blood parrot cichlid which is a cross of several species, especially from genus Amphilophus. With a beak-shaped mouth, an abnormal spine, and an occasionally missing caudal fin (known as the "love heart" parrot cichlid), the fish is controversial among aquarists. Some have called blood parrot cichlids "the Frankenstein monster of the fish world."[68] Another notable hybrid, the flowerhorn cichlid, was very popular in some parts of Asia from 2001 until late 2003, and is believed to bring good luck to

its owner.[69] The popularity of the flowerhorn cichlid declined in 2004.[70] Owners released many specimens into the rivers and canals of Malaysia and Singapore where they threaten endemic communities.[71]

Numerous cichlid species have been selectively bred to develop ornamental aquarium strains. The most intensive programs have involved angelfish and discus, and many mutations that affect both coloration and finnage are known.[4][72][73] Other cichlids have been bred for albino, leucistic, and xanthistic pigment mutations, including oscars, convicts and Pelvicachromis pulcher.[4][50] Both dominant and recessive pigment mutations have been observed.[10] In convict cichlids, for example, a leucistic coloration is recessively inherited,[74] while in Oreochromis niloticus niloticus red coloration is caused by a dominant inherited mutation.[75]

This selective breeding may have unintended consequences. For example, hybrid strains of Mikrogeophagus ramirezi have health and fertility problems.[76] Similarly, intentional inbreeding can cause physical abnormalities, such as the notched phenotype in angelfish.[77]

Pterophyllum scalare. Angelfish.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Perciformes
Family: Cichlidae
Subfamily: Cichlasomatinae
Tribe: Heroini
Genus: Pterophyllum, Heckel, 1840
Binomial name: Pterophyllum altum (Pellegrin, 1903), Pterophyllum leopoldi (Gosse, 1963), Pterophyllum scalare (Schultze, 1823)

Pterophyllum is a small genus of freshwater fish from the family Cichlidae known to most aquarists as "Angelfish". All Pterophyllum species originate from the Amazon River, Orinoco River and Essequibo River basins in tropical South America. The three species of Pterophyllum are unusually shaped for cichlids being greatly laterally compressed, with round bodies and elongated triangular dorsal and anal fins. This body shape allows them to hide among roots and plants, often on a vertical surface. Naturally occurring angelfish are frequently striped longitudinally, colouration which provides additional camouflage. Angelfish are ambush predators and prey on small fish and macroinvertebrates. All Pterophyllum species form monogamous pairs. Eggs are generally laid on a submerged log or a flattened leaf. As is the case for other cichlids, brood care is highly developed.

History

The freshwater angelfish was first talked about by Lichtenstein in 1824. Being scientifically named Pterophyllum scalare (pronounced: Ter'-o-fill" lum ska-la're), the meaning of Pterophyllum is; "winged leaf".

It was not until the late 1920s to early 1930s that the angelfish was bred in captivity in the United States.

In 1963 another species of Pterophyllum were discovered, P. leopoldi, this species was described by Gosse. In the beginning they were first described under another name, with P. leopoldi becoming the valid scientific name. Prior to that a species by the name of Pterophyllum altum had been discovered in 1906 by Pellegrin. There may still be undiscovered species in the Amazon River. New species of fish are discovered with increasing frequency, and, like P. scalare and leopoldi, the differences may be subtle. Scientific notations describe the P. leopoldi as having 29–35 scales in a lateral row and straight predorsal contour. Whereas, the P. scalare is described as having 35–45 scales in a lateral row and a notched predorsal contour. The leopoldi show the same coloration as scalare. Leopoldi can show a faint stripe between the eye stripe and the first complete body stripe and a third incomplete body stripe between the two main (complete) body stripes that extends three-fourths the length of the body. Whereas, the scalare's body does not show the stripe between the eye stipe and first complete body stripe at all, and the third stripe between the two main body stripes rarely extends downward more than a half inch, if even present. The leopoldi fry develop three to eight body stripes, with all but one to five fading away as they mature, whereas scalare only have two in true wild form throughout life.

Angelfish were bred in captivity for some 30 years prior to leopoldi being described; possibly longer outside the United States.

P. altum

This Pterophyllum altum has adapted well to life in captivity. Pterophyllum altum, also referred to as the Altum Angelfish, Deep Angelfish, or Orinoco Angelfish,[1] occurs strictly in the Orinoco River Basin and the Upper Rio Negro watershed in Southern Venezuela, Southeastern Colombia and extreme Northern Brazil.[2] The

species is the largest of the genus and specimens exceeding 50 cm in height (from tip of dorsal to tip of anal fin) have been reported in the wild; in aquariums, specimens are known to have grown to over 40 cm. Its natural base color is silver but with three brownish/red vertical stripes and red striations into the fins. The species may show red spotting and a blueish green dorsal overcast when mature and when aroused exhibits a black operculum spot. Characteristic of this species is an acute incision or notch above the nares (supraorbital indention). All true Orinoco Altum specimens show this trait, whereas commercial hybrids product of crosses to Pterophyllum scalare, that are occasionally performed by breeders to sell them as "Orinoco Altum", may not exhibit the trait or it may appear in a lesser degree. The true wildcaught Orinoco Altum is among the most challenging among tropical fish to breed in captivity. Most Altum Angels are more frequently found in the well oxygenated, extremely soft waters of Upper and Middle Orinoco tributaries shed from the Guiana Shield Highlands, preferring a pH range between 4.5 to 5.8. These are very transparent blackwaters with almost nil conductivity. Temperature range in these waters is between 78 and 84 °F (26 and 29 °C). They are also found in the Atabapo River and Inirida River floodplain, down the Casiquiare and Guainía floodplain where the Rio Negro is born, before entering Brazilian territory. Unlike P. scalare (mentioned above) which prefer to spawn on the submerged leaves of plants and trees in the flooded rainforest, P. altum prefers to spawn on submerged roots and tree branches in a moderate water current. This species is recommended for intermediate to advanced aquarists due to the detailed maintenance it requires for proper health. Pterophyllum altum is the national fish of Venezuela and an image of the fish appears on some currency bills of that country.

Pterophyllum leopoldi

Pterophyllum leopoldi, also referred to as the teardrop angelfish, long-nosed angelfish,[3] dwarf angelfish, or Roman-nosed angelfish,[4] is a river dwelling angelfish species that originates from rivers in the Amazon River basin along the Solimões River, Amazon River, and Rupununi River.[5] It is distinguished from other members of the Pterophyllum genus by the absence of a pre-dorsal notch and by the presence of a black blotch at the dorsal insertion on the 4th vertical bar.[3] The species was originally described as Plataxoides leopoldi in 1963 by J.P. Gosse,[6] and is frequently misidentified as P. dumerilii when the species is imported in the aquarium trade.[7] P. leopoldi is the smallest of the angelfish species and the most aggressive.

Pterophyllum scalare

The species most commonly referred to as angelfish or freshwater angelfish,[8] is the most common species of Pterophyllum held in captivity. Its natural habitat Amazon River basin in Peru, Colombia, and Brazil, particularly the Ucayali, Solimões and Amazon rivers, as well as the rivers of Amapá in Brazil, the Oyapock River in French Guiana and the Essequibo River in Guyana. It is found in swamps or flooded grounds where vegetation is dense and the water is either clear or silty.[9] Its native water conditions range from a pH of 6.0 to 8.0, a water hardness range of 5 - 13 dH, and water temperature ranging from 24 to 30 °C (75 to 86 °F).[9] It was originally described as Zeus scalaris in 1823, and has also been described be several different names, including Platax scalaris, Plataxoides dumerilii, Pterophillum eimekei, Pterophyllum dumerilii, and Pterophyllum eimekei.[10]

Angelfish are one of the most commonly kept freshwater aquarium fish, as well as the most commonly kept cichlid. They are prized for their unique shape, color and behavior. Many hobbyists consider angelfish to be a relatively intelligent fish, able to recognize their owners.

In the aquarium

The most commonly kept species in the aquarium is Pterophyllum scalare. Most of the individuals the aquarium trade are captive-bred. Sometimes, Pterophyllum altum is available. Captive bred P. altum is available but occasionaly. Pterophyllum leopoldi is the hardest to find in the trade.

Angelfish are kept in a warm aquarium, ideally around 80 °F (27 °C). They will do best if fed a mixture of flake, frozen and live food. Care should be taken to not overfeed, they will continue to eat even what they do not need to. This will lead to a buildup of fats resulting in inactivity and early death. Angelfish will do best if kept in an acidic environment, pH should be below 7.5 (note: 7.5 is still slightly alkaline - acidic is defined as below 7.0). All angelfish will prefer water with a pH of at most 7.0. Though most Pterophyllum scalare will thrive in a wide range of pH values. Even though angelfish are a member of the Cichlid family they are generally peaceful, however; the general rule "big fish eat little fish" applies. Aggressive fish should not be kept with angelfish because their flowing fins are vulnerable to fin nipping. Some smaller more aggressive fish may even nip at the fins of these fish.

Breeding

P. scalare is relatively easy to breed in the aquarium, although one of the results of generations of inbreeding is that many breeds have almost completely lost their rearing instincts resulting in the tendency of the parents to eat their young. In addition, it is very difficult to accurately identify the gender of any individual until they are nearly ready to breed.

Angelfish pairs form long-term relationships where each individual will protect the other from threats and potential suitors. Upon the death or removal of one of the mated pair, breeders have experienced both the total refusal of the remaining mate to pair up with any other angelfish and successful breeding with subsequent mates.

Depending upon aquarium conditions, P. scalare reaches sexual maturity at the age of six to twelve months or more. In situations where the eggs are removed from the aquarium immediately after spawning, the pair is capable of spawning every seven to ten days. Around the age of approximately three years, spawning frequency will decrease and eventually cease.

When the pair is ready to spawn, they will choose an appropriate medium upon which to lay the eggs and spend one to two days picking off detritus and algae from the surface. This medium may be a broad-leaf plant in the aquarium, a flat surface such as a piece of slate placed vertically in the aquarium, a length of pipe, or even the glass sides of the aquarium. The female will deposit a line of eggs on the spawning substrate, followed by the male who will fertilize the eggs. This process will repeat itself until there are a total of 100 to more than 1,200 eggs, depending on the size and health of the female fish. As both parents care for the offspring throughout development, the pair will take turns maintaining a high rate of water circulation around the eggs by swimming very close to the eggs and fanning the eggs with their pectoral fins. In a few days, the eggs hatch and the fry remain attached to the spawning substrate. During this period, the fry will not eat and will survive by consuming the remains of their yolk sacs. At one week, the fry will detach and become free-swimming. Successful parents will keep close watch on the eggs until they become free-swimming. At the free-swimming stage, the fry can be fed newly-hatched brine shrimp (Artemia spp.) or microworms. It is generally accepted that brine shrimp are the superior choice for fast growth rates of fry.

P. altum is notably difficult to breed in an aquarium environment.

Compatibility with other fish

In pet stores the freshwater angelfish is typically placed in the semi-aggressive category, but that might prove false with some fish. For example, platies, tetras and plecos all are compatible with angelfish, although some tetras and barbs will usually nip at their long fins.

Strains of Angelfish

Most strains of angelfish available in the fishkeeping hobby are the result of many decades of selective breeding. For the most part, the original crosses of wild angelfish were not recorded and confusion between the various species of Pterophyllum, especially P. scalare and P. leopoldi, is common. This makes the origins of "Domestic angelfish" unclear. Domestic strains are most likely a collection of genes resulting from more than one species of wild angelfish combined with the selection of mutations in domesticated lines over the last 60 or more years. The result of this is a domestic angelfish that is a true hybrid with little more than a superficial resemblance to wild Pterophyllum species. It would be inaccurate to say that they accurately represent any species of wild angelfish, although they most resemble P. scalare and are frequently referred to as such.

Domestic angelfish have been bred and crossbred for several decades. There are hundreds of mutations of little importance by themselves. Much of the research into the known genetics of P. scalare is the result of the research of Dr. Joanne Norton, who published a series of 18 articles in Freshwater and Marine Aquarium (FAMA) Magazine. Those articles are reprinted at http://theangelfishsociety.org/genetics.htm .

... more on wikipedia

Mikrogeophagus ramirezi. Ram cichlid.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Perciformes
Family: Cichlidae
Subfamily: Geophaginae
Genus: Mikrogeophagus
Species: M. ramirezi
Binomial name: Mikrogeophagus ramirezi (Myers & Harry, 1948)[1]
Synonyms

Apistogramma ramirezi
Microgeophagus ramirezi
Papiliochromis ramirezi
Papilochromis ramirezi[2][3]

Mikrogeophagus ramirezi is a species of freshwater fish endemic to the Orinoco River basin, in the savannahs of Venezuela and Colombia in South America.[2] The species has been examined in studies on fish behaviour[4] and is a popular aquarium fish, traded under a variety of common names including Ram, Blue ram, German blue ram, Asian ram, Butterfly cichlid, Ramirez's dwarf cichlid, Dwarf butterfly cichlid and Ramirezi. The species is a member of the family Cichlidae and is included in subfamily Geophaginae.

The species is named after Manuel Ramirez, an early collector and importer of the species for the aquarium trade. George S. Myers and R. R. Harry (1948) originally described the species as Apistogramma ramirezi though the species was later moved to and from various genera including: Microgeophagus, Papiliochromis, Pseudoapistogramma and Pseudogeophagus.

Appearance and sexual dimorphism

Wild ram cichlids are often more colorful than the tank bred counterparts, which suffer from poor breeding and also being injected with hormones for more color, although this makes as many as one in four males infertile. Male specimens of the ram usually have the first few rays of the dorsal fin extended, but breeding has made some females also show this. There is also the fact that, when close to spawning, female rams have a pink or red blush on the abdomen. Females also have a blue sheen over the spot just below the dorsal fin, and males do not show this. Males reach a maximum length of seven centimeters, and females are usually slightly smaller. (Please note that the black spot method of sexing does not apply for the golden and electric blue varieties of the species.)

Distribution and habitat

Unlike their relatives in the genus Apistogramma, the natural habitat of M. ramirezi occurs in the warm, (25.5-29.5 °C, 78-85 °F), acidic (pH 5) water courses in the llanos savannahs of Venezuela and Colombia.[5][7][10] The water at sites where M. ramirezi has been found is generally slow-flowing, contains few dissolved minerals, and ranges in color from clear to darkly stained with tannins.[5] The species is typically found where cover in the form of aquatic or submersed vegetation is available.[5]

Reproduction

Once sexually mature, the species forms monogamous pairs prior to spawning.[7] The species is known to lay its small 0.9 - 1.5 mm, adhesive eggs on flattened stones or directly into small depressions dug in the gravel.[5] Like many cichlids, M. ramirezi practices biparental brood care with both the male and the female playing roles in egg-tending and territorial defense.[5][7] Typical clutch size for the species is 150-300 eggs,[5][6] though larger clutches up to 500 have been reported.[10] Parental M. ramirezi have been observed to fan water over their eggs which hatch in 40 hours at 29 °C (84.2 °F). The larvae are not free-swimming for 5 days after which they are escorted by the male or the female in a dense school for foraging.[5]

In the aquarium

The ram cichlid is a popular cichlid for the tropical freshwater, community aquarium although it is not necessarily the easiest cichlid to maintain in many situations.[5] This is because the species is often kept with other fish that are more assertive, aggressive or overly active.[5][7] The species is innately shy and is best kept with passive dither fish, such as neon or cardinal tetras.[7] The species will readily exhibit breeding behaviours in water of pH 5.0-6.5, though softer water encourages more regular spawning.[5][7][10] It is easier to maintain the species in larger aquaria as the species is intolerant of common aquarium pollutants such as nitrate.[7] The aquarium should be decorated to mimic the natural environment and is best decorated with several densely planted regions of aquatic plants, separated by open water.[6] The species is prone to filial cannibalism of its brood if distressed.[7] As the water must be free of pollutants, aquarium filtration is important, though water movement should not be extreme. Removing and replacing small amounts of water changes assists with minimising the quantities of these pollutants and should be conducted regularly.[10]

Numerous strains of M. ramirezi have been developed in Asia for the fishkeeping hobby. These include numerous xanthistic forms, known as gold rams, along with larger, high-bodied and long-finned varieties.[5][7] [14] Many of these varieties suffer from lower fertility, health problems or reduced brood care in comparison to wild-type specimens.

Labidochromis caeruleus, Lemon yellow lab

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Perciformes
Family: Cichlidae
Genus: Labidochromis
Species: L. caeruleus
Binomial name: Labidochromis caeruleus, Fryer, 1956

Labidochromis caeruleus is a species of cichlid fish that is endemic to the central western coastal region of Lake Malawi in East Africa. It is also known as lemon yellow lab, the blue streak hap, the electric yellow or yellow prince, depending on the colour morph. A naturally occurring yellow-coloured variant from Nkhata Bay is one of the most popular cichlids amongst aquarium hobbyists.

This species is a maternal mouthbrooder, meaning the eggs are carried, hatch, and develop in the mother's mouth (buccal cavity), for about three weeks. These fish are ovophiles and the male will excavate a pit in the sand within his territory, in which the female lays the eggs; the female then takes these eggs into her mouth for fertilization.

Electric yellows inhabit water with a pH between 7.8 and 8.9 and an ideal temperature range of 23–26 °C (73.4–78.8 °F).

Aquarium care

Electric yellows are peaceful compared to most other African cichlids. Despite this, like all cichlids from Lake Malawi, they are best kept in specialist cichlid aquariums with other Mbuna. As with most cichlids, electric yellows should not be kept with freshwater community aquarium species such as Zebra Danios or Neon Tetras, they may nip the finnage of other species, and are not recommended for freshwater community aquariums because of the differences in the natural habitats between cichlids and other fish species. In an aquarium setting, their natural habitat of rocks and caves should be emulated. Their diet should consist mostly of prepared cichlid pellets or flakes, supplemented with foods like krill, brineshrimp, and Spirulina flakes. Restrain from feeding these cichlids feeder goldfish, as they are likely carrying diseases that will cause harm to your cichlids

Animalia. Chordata. Actinopterygii. Perciformes. Osphronemidae.

Family description

Gourami

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Perciformes
Suborder: Anabantoidei
Family: Osphronemidae, Bleeker, 1859
Subfamilies
- Belontiinae
- Macropodusinae
- Osphroneminae
- Luciocephalinae

Gouramis are a family, Osphronemidae, of freshwater perciform fishes. The fish are native to Asia, from Pakistan and India to the Malay Archipelago and north-easterly towards Korea. The name "gourami" is also used for fish of the families Helostomatidae and Anabantidae. "Gouramis" is an example of a redundant plural. Gourami is already plural, in its original language.

Many gouramis have an elongated ray at the front of their pelvic fins. Many species show parental care: some are mouthbrooders, and others, like the Siamese fighting fish (Betta splendens), build bubble nests. Currently, about 90 species are recognised, placed in 4 subfamilies and about 15 genera.

The name Polyacanthidae has also been used for this family. Some fish now classified as gouramis were previously placed in family Anabantidae. The subfamily Belontiinae was recently demoted from the family Belontiidae. As labyrinth fishes, gouramis have a lung-like labyrinth organ that allows them to gulp air and use atmospheric oxygen. This organ is a vital innovation for fishes that often inhabit warm, shallow, oxygen-poor water.

As food

Giant gouramis, Osphronemus goramy, are eaten in some parts of the world. In Indonesia they are often deep-fried and served in sweet-sour sauce, chili sauce, and other spices. Canned, fried gourami are available in China, and throughout the world in oriental supermarkets. Which species the can contains is uncertain, however; the illustration on the lid of the can of one product depicts the moonlight gourami, Trichogaster microlepis.

In the aquarium

Gouramis, particularly the tri-spot and dwarf, are often kept in home aquariums. As labyrinth fish, they will often stay near the top of the tank. Though often considered peaceful, they can kill almost all other smaller or long-finned fish. However, this usually does not apply to the common types as mentioned above. When they are aggressive, they shred other fishes' fins to the point that the victim can not swim and thus dies. The males of many members of this family like to spar, thus caution must be taken when keeping males together. Aggression can also occur when the fish are too crowded, and they compete for the available space. Gouramis will eat either prepared or live foods.

Compatibility

Depending on the species, male gouramis are aggressive; they also may be fin nippers, and generally may bother other fish in the tank.

In some species, when two males are put in a tank together they will fight constantly. Other, more peaceful, gouramis may show mild to moderate signs of aggression, but are usually able to live together. Male gouramis will ignore many species, such as danios, mollies, silver dollars, and plecostomus catfish, but will often show aggression toward species with long, flowing fins like male guppies, goldfish, and bettas, because they display a long tail and bright colors, presenting competition for impressing a female gourami. Female gouramis sometimes bother other fish but usually keep to themselves.

Species

There are about 96 species in 15 genera.

Betta splendens. Siamese fighting fish.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Perciformes
Family: Osphronemidae
Genus: Betta
Species: B. splendens
Binomial name
Betta splendens, Regan, 1910

The Siamese fighting fish (Betta splendens), also known as the betta and simply as the fighter, is a popular species of freshwater aquarium fish. The name of the genus is derived from ikan bettah, taken from a local dialect of Thailand (Siam).[1] The wild ancestors of this fish are native to the rice paddies of Thailand, peninsular Malaysia and Cambodia and are called pla-kad or trey krem ("fighting fish") in Thai.

Description

B. splendens usually grow to an overall length of about 5 cm , though some varieties reach 5-8 inches in length[citation needed]. Although known for their brilliant colors and large, flowing fins, the natural coloration of B. splendens is a dull green and brown, and the fins of wild specimens are relatively short. However, brilliantly colored and longer finned varieties (i.e. Veiltail; Delta; Superdelta; and Halfmoon) have been developed through selective breeding.

This species lives approximately 2–5 years in captivity, generally between 3-4, rarely 5–6 years, fed with anabolics 7–9 years[citation needed].

The fish is a member of the gourami family (family Osphronemidae) of order Perciformes, but was formerly classified among the Anabantidae. Although there are nearly 50 other members of the Betta genus, B. splendens is the most popular species among aquarium hobbyists, particularly in the United States.

Diet

Siamese fighting fish have upturned mouths and are primarily carnivorous surface feeders, although some vegetable matter may be eaten. In the wild, they feed on zooplankton including crustaceans and the larvae of mosquitoes and other insects, such as flies, crickets, or grasshoppers.[citation needed] Fish who feed on a wide range of foods live longer, have richer colors, and heal fin damage more quickly.[citation needed] Typically, commercial betta pellets are a combination of mashed shrimp meal, wheat flour, fish meal, brine shrimp, bloodworms, and vitamins. These fish will also eat live or frozen bloodworms, mosquito larvae, brine shrimp or daphnia.

Reproduction and early development

The male betta will flare his gills, twist his body, and spread his fins if he is interested in the female. The female will darken in color, then curve her body back and forth as a response. Males build bubble nests of various sizes and thicknesses at the surface of the water. The act of spawning itself is called a "nuptial embrace", for the male wraps his body around the female; around 10-41 eggs are released during each embrace, until the female is exhausted of eggs. The male, in his turn, releases milt into the water, and fertilization takes place externally. During and after spawning, the male uses his mouth to retrieve sinking eggs and deposit them in the bubble nest (during mating the female sometimes assists her partner, but more often she will simply devour all the eggs that she manages to catch). Once the female has released all of her eggs, she is chased away from the male's territory, as it is likely that she'll eat the eggs due to hunger.[2] Henceforth, the eggs remain in the male's care. He

carefully keeps them in his bubble nest, making sure none fall to the bottom, and repairing the bubble nest as needed. Incubation lasts for 24–36 hours, and the newly-hatched larvae remain in the nest for the next 2–3 days, until their yolk sacs are fully absorbed. Afterwards the fry leave the nest and the free-swimming stage begins. It is common practice in the aquarium hobby to remove the male at this point, so that he would not eat his young (although it has been suggested that this danger is overrated). In this first period of their lives, B. splendens fry are totally dependent on their gills; the labyrinth organ which allows the species to breathe atmospheric oxygen typically develops at 3 to 6 weeks of age, depending on the general growth rate, which can be highly variable. B. splendens can reach sexual maturity at an age as early as 3 months.

B. splendens can be hybridized with B. imbellis, Betta sp. Mahachai and B. smaragdina, though with the latter the fry tend to have low survival rates. As well as these hybrids within the Betta genus, there have been reports of the inter generic hybridizing of Betta splendens and Macropodus opercularis- the Paradise Fish.

Colours

B. splendens have been affectionately nicknamed "The Jewel of the Orient" due to their beauty and wide range of colours which are produced through selective breeding[citation needed].

Wild fish only exhibit strong colours when agitated.[citation needed] However, breeders have been able to make this colouration permanent, and a wide variety of hues breed true. A wide variety of colours are available to the aquarist such as red, blue, turquoise, orange, yellow, green, bright blue with pink highlights, cream and even true white (the "Opaque" white, not to be confused with albino). The shades of blue, turquoise and green are slightly iridescent, and can appear to change color with different lighting conditions or viewing angles; this is because these colors (unlike black or red) are not due to pigments, but created through refraction within a layer of translucent guanine crystals. Breeders have also developed different colour patterns such as marble and butterfly, as well as metallic shades like copper, gold, or platinum (these were obtained by crossing B. splendens to other Betta species).

Breeders around the world continue to develop new varieties. Often, the male of the species are sold preferentially in stores because of their beauty, compared to the females. Recently, breeders have developed in females the same range of colors previously only bred in males. However, females never develop fins as showy as males of the same type and are often more subdued in colouration.

The true albino betta has been feverishly sought after since one recorded appearance in 1927, and another in 1953. Neither of these were able to establish a line of true albinos. In 1994, a hobbyist named Tanaka claims to have successfully bred albino bettas. [2]

Tail shapes

Breeders have developed several different tail shapes:

- Veiltail (non-symmetrical tail, only two rays)
- Crowntail (highly frilled or jagged rays, extended spiny rays, also called fringetail)
- Combtail (less extended version of the crown tail, derived from breeding crown and veil tails)
- Boxtyzard (full moon shape with red flairs)
- Half-moon (large tail fin that forms a 180-degree or larger circle segment)
- Short-finned fighting style (sometimes called "plakat")
- Double-tail (the tail fin is split into two lobes and the dorsal fin is significantly elongated)
- Delta tail (tail span is less than half-moon with sharp edges)
- Fantail (a rounded delta tail)
- Halfsun (Combtail with anal fin going 180 degrees, like a halfmoon)
- Rosetail (halfmoon with so much finnage that it overlaps and looks like a rose)

Behavior

Males and females flare or puff out their gill covers (opercula) in order to appear more impressive, either to intimidate other rivals or as an act of courtship. Other reasons for flaring their gills is that they are startled by movement or change of scene in their environment. Both sexes will display horizontal bars (unless they are too light a color for this to show) if stressed or frightened; however, such a color change, common in females of any age, is very rare in mature males. Females often flare their gills at other females, especially when setting up a

pecking order. Flirting fish behave similarly, with vertical instead of horizontal stripes indicating a willingness and readiness to breed (females only). Bettas sometimes require a place to hide, even in the absence of threats. They may set up a territory centered on a plant or rocky alcove, sometimes becoming highly possessive of it and aggressive toward trespassing rivals.

On average, males are more aggressive. The aggression of this fish has been studied by ethologists and comparative psychologists.[3] Siamese fighting fish will even respond aggressively to their own reflections in a mirror; use of a mirror avoids the risk of physical damage inherent in actual conflict, although it can lead to stress in some individuals. Like other fish, the fighter may respond to the presence of humans and become trained to respond to feeding cues (such as a hand placed over the water's surface). They are quite curious and will watch humans going about their business nearby. When plant leaves reach the surface, they are useful for males to base their bubble nests on.

Tanks and Tank Mates

In captivity, male B. splendens are best housed alone since, as their name implies, they will aggressively attack and kill (or be killed by) another male in their territory. Similarly, if housed with a female, they will tend to 'harass' and stress the female with continued spawning. Female bettas can be kept together in groups of three in larger tanks with hiding places for the less-aggressive females. Male bettas have been successfully housed in large community tanks with other fish that have similar tropical temperature and water quality requirements. Bettas might harass and nip at other species that are colorful or have long, flowing fins, and may be nipped at themselves by aggressive tank mates. Careful research should be carried out before selecting tank mates. [4] Although many retail pet shops market amazingly small "bowls" for B. splendens and the fish can, in fact, survive in a small container for periods of time, for optimum health and vigor larger tanks should be considered. An ideal environment for a single male specimen should have a volume of 2.5 gal (9.5 liters) and up is better for your fish. [5]

In popular culture

The Siamese fighting fish has been used as the default background in the beta and release candidate versions of the Windows 7 operating system, in an apparent reference to the name "Betta". A similar wallpaper also used in the pre-releases of Windows 8.

In the movie From Russia with Love, the James Bond villain Blofeld compared the strategy of SPECTRE to three Siamese fighting fish (Betta)fighting each other. There, two will fight each other to the death while the third will wait its turn, symbolizing the conflict between the USA and the Soviet Union as the two fighting fishes and SPECTRE as the third waiting fish.

The title of S.E. Hinton's novel Rumble Fish, is an eponymous reference to what Rusty James and the Motorcycle Boy call the breed. In Francis Ford Coppola's film adaptation, everything but the Siamese fighting fish appear in black and white.

Two cartoon fish; Milo (voice provided by Kyle Massey) and his brother Oscar (voice provided by Justin Roiland) two of the main characters of the new Disney Channel original series, Fish Hooks are half betta fish.

A Siamese Fighting Fish can be seen in the 2009/2010 film "Bad Lieutenant: Port of Call New Orleans" Found by lead actor Nicolas Cage, in a glass of water left on a desk, at a home where a mass murder was carried out.

Animalia. Chordata. Actinopterygii. Siluriformes. Callichthyidae

Family description

Temporal range: Late Paleocene - Recent

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Superfamily: Loricarioidea
Family: Callichthyidae, Bonaparte, 1838
Genera

- Aspidoras
- Callichthys
- **Corydoras**
- Dianema
- **Hoplosternum**
- Lepthoplosternum
- Megalechis
- Brochis
- Scleromystax

Callichthyidae is a family of catfishes (order Siluriformes), called armored catfishes due to the two rows of bony plates (or scutes) running down the length of the body. This family contains some of the most popular freshwater aquarium fish, such as the Corydoras.

Taxonomy

The family derives its name from the Greek words kallis (beautiful) and ichthys (fish).[1] Callichthyidae is one of six families in the superfamily Loricarioidea. It is sister to a clade formed by Scoloplacidae, Astroblepidae, and Loricariidae.[2] Within the family Callichthyidae, there are two subfamilies with eight genera and about 177 species.[3] They account for about 7% of all catfish. Most of these species are in the genus Corydoras, the largest catfish genus.[2]

The subfamily Corydoradinae includes about 90% of the species in the family Callichthyidae and is one of the most diverse siluriform assemblages in the Neotropics, with approximately 170 valid species.[4] It includes two tribes, Aspidoradini and Corydoradini. Aspidoradini contains Aspidoras and Scleromystax, while Corydoradini contains Corydoras and Brochis[5][6]. Some believe that the genus Brochis should be synonymized with Corydoras.[4]

The subfamily Callichthyinae contains Callichthys, Dianema, Hoplosternum, Lepthoplosternum, and Megalechis. According to a 1997 paper, Callichthys is the most basal member of the subfamily.[7] In a 2004 study, different relationships among the callichthyines were found: Dianema + Hoplosternum form the most basal clade, and Callichthys is sister to Lepthoplosternum + Megalechis.[8]

Fossil record

The first known fossil species of callichthyid is Corydoras revelatus from Salta, Argentina of the late Paleocene.[9][10] This species is tentatively placed in Corydoras, but is unambiguously a member of the subfamily Corydoradinae.[4] It indicates that the lineages leading to the two callichthyid subfamilies occurred at least by the late Paleocene.[4] It also suggests an earlier differentiation of loricarioids in comparison to other catfishes, or a lack of older fossils of other Neotropical groups.[4]

A fossil identified as Hoplosternum sp. has also been identified from the middle Miocene in the La Venta formation, Magdalena River basin, Colombia.[10]

Distribution

The Neotropical family Callichthyidae is found in most South American river drainages (Paraná-Paraguay, São Francisco, Atlantic Coastal basins in Brazil, Amazon, Orinoco, Maracaibo, Magdalena), as well as in a few rivers in Panama. They present highest diversity in the headwaters of the Amazonas drainage and those rivers draining the Guiana Shield.[2]

The subfamily Corydoradinae has a predominantly cis-Andean distribution north of the Rio de La Plata system, in Argentina.[4] Representatives of the Corydoradinae are found in several freshwater environments, ranging from fastflowing piedmont streams with sandy or rocky bottom to lowland pools with muddy bottom.[4]

Description

Callichthyids are fairly small catfish, and range in size from some tiny Corydoras species that do not exceed 2 centimetres (0.79 in) to Hoplosternum littorale, which some sources list as growing to a length of up to 24 centimetres (9.4 in) TL.[2][11] The mouth is small and ventral with one or two pairs of well-developed barbels.[3] The dorsal and pectoral fins have strong spines, and there is a spine at the anterior border of the adipose fin.

The scutes that give these fish their namesake are one of the most obvious characteristics of these fish. The body has two rows of overlapping bony plates on each side.[3] These plates are arranged so they overlap along the rows as well as between the rows, giving full protection but at the same time allowing some freedom of movement. These scutes connect with the solid bones of the head, and the head itself may be covered with bony plates. The upper row of lateral scutes may either meet on the back or there may be a narrow bare area that may be filled in with small oval or roundish bony platelets.

Species of the Corydoradinae are of small size (maximum about 9 centimetres (3.5 in) in standard length) and are easily distinguished from other callichthyids by their deep bodies and short maxillary barbels.[4]

Ecology

Living habits are varied; the family includes both bottom foraging and mid-water species. Callichthyids inhabit a wide range of habitats, from small, swift, oxygen-rich creeks to big rivers and flooded areas. Their habitats may even included swampy and muddy habitats where oxygen may be virtually absent.[2] Callichthyids survive in these conditions by breathing air; air is collected at the water surface and swallowed. The intestines are used to absorb oxygen, and the air is expelled from the anus.[2] The anterior digestive intestine packages digesta into a string of slightly compressed boluses, creating an air channel in the digestive intestine thus allowing air to pass unimpeded. The posterior intestine is modified for respiration into a thin-walled and highly vascularized structure by reduction of the thickness of the epithelium, submucosa and muscle layers; though highly modified to absorb air, it is inefficient for digestive purposes. Air moving through the digestive tract facilitates the movement of digesta to the rectum.[12] Unlike other catfish such as loricariids or trichomycterids that may breathe air only under hypoxic conditions, callichthyids breathe air under all water conditions.[2] Some callichthyids are able to absorb air through their hindgut to move short distances on land.[3] Air stored in their digestive tract also accounts for 75% of the necessary air for neutral buoyancy.[2]

Breeding habits are also variable. Corydoradines breed over the substrate (such as rocks, logs, or leaves) as most catfish. However, the members of the subfamily Callichthyinae are known for building and guarding floating foam nests (see bubble nest); Hoplosternum littorale is reported to have the most complex nest structure.[13] These floating nests are made of foam and vegetal debris. Spawning and caring for the eggs and larvae takes place in these nests.[2][14] Parental care in callichthyines is by the male.[15] In Corydoras and Hoplosternum, fertilization of eggs involves sperm drinking; the female and male form the "T-position" with the female's mouth over the male's genital opening, and then the female drinks the sperms, releasing the sperm and eggs simultaneously.[16]

Relationship to humans

Some species are quite common in South America and are fished commercially. They are usually cooked in their bony armor.[2] Some callichthyids, especially species of Corydoras, are popular as ornamental fish in the fishkeeping hobby.[2]

Corydoras aeneus, Bronze corydoras

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Subfamily: Corydoradinae
Genus: Corydoras
Species: C. aeneus
Binomial name: Corydoras aeneus (Gill, 1858)
Synonyms

Hoplosoma aeneum. Gill, 1858.
Corydoras microps. Eigenmann & Kennedy, 1903.
Corydoras venezuelanus. Ihering, 1911.
Corydoras macrosteus. Regan, 1912.
Corydoras schultzei. Holly, 1940.

The bronze corydoras (Corydoras aeneus), bronze catfish, lightspot corydoras or wavy catfish is a tropical freshwater fish in the "armored catfish" (Callichthyidae) family. It is widely distributed in South America on the eastern side of the Andes, from Colombia and Trinidad to the Río de la Plata basin.[1] They were originally described as Hoplosoma aeneum by Theodore Gill in 1858 and have also been referred to as Callichthys aeneus.

Appearance and anatomy

The adult size is 6½ cm for males and a slightly larger 7 cm for females (2½ to 2¾ inches). Their average life span is 10 years. It has a yellow or pink body, white belly, and is blue-grey over its head and back. Its fins are yellow or pink and immaculate. In common with most Corydoras the dorsal, pectoral and adipose fins have an additional sharp barb and have a mild poison which causes fish which try to attack them to get stung. A brownish-orange patch is usually present on the head, just before the dorsal fin, and is its most distinctive feature when viewed from above in the stream.

Ecology

They are found in quiet, shallow waters with soft bottoms that can sometimes be heavily polluted by clouds of disturbed mud from the bottom, but it also inhabits running waters.[1] In its native habitat, it inhabits waters with a temperature range of 25 °C to 28 °C (77 °F to 82 °F), pH 6.0-8.0, and hardness 5 to 19 DGH.[1] Like most members of the Corydoras genus, these catfish have a unique method of coping with the low oxygen content that prevails in such environments. In addition to utilizing their gills like any other fish, they rapidly come to the surface of the water and draw air in through their mouth. This air is then absorbed through the wall of the intestine and any surplus air is expelled through the vent.[1] It typically stays in schools of 20 to 30 individuals.[1] It feeds on worms, benthic crustaceans, insects, and plant matter.[1]

Reproduction

Reproduction occurs with the onset of the rainy season, which changes the water chemistry.[1] Females spawn 10–20 egg-clutches with multiple males at a time, but an entire egg clutch is inseminated by sperm of a single male.[2]

Bronze cories have a unique method of insemination. When these fish reproduce, the male will present his abdomen to the female. The female will attach her mouth to the male's genital opening, creating the well-known "T-position" many Corydoras exhibit during courtship. The female will then drink the sperm. The sperm rapidly moves through her intestines and is discharged together with her eggs into a pouch formed by her pelvic fins. The female can then swim away and deposit the pouch somewhere else alone. Because the T-position is exhibited in other species than just C. aeneus, it is likely that they also exhibit this behavior.[3] In the wild, eggs are laid on waterweeds.[2]

Males do not form territories or compete over females; interference between males might only happen when two males present their abdomens simultaneously. On the other hand, females do not choose between males. Mating is more or less random; therefore, male reproductive success is directly related to courtship frequency.[2]

The eggs of C. aeneus exhibit a unique surface pattern with small villi-like protuberances which resemble attaching-filaments of teleost eggs. These structures allow the eggs to be adhesive and stick to a specific place or to each other. The presence of these structures may be related to the turbid habitat in which this species lives.[4]

In the aquarium

Bronze corys are probably the most popular Corydoras species.[5] It is annually bred and shipped in large quantities all over the world[6] It is easily bred and is produced in commercial quantities in the United States, Europe, and Singapore. Most of the available fish are therefore domestic strains. Wild imports are reported to be less easy to breed.

They are a hardy and useful aquarium fish despite having a coloration that is by no means striking or unusual. Many aquarists are fascinated by the habits of these fish. They ceaselessly comb the bottom of the aquarium for food and therefore disturb it slightly, sending up detritus and waste material that has settled loosely on the bottom. They prefer being kept in groups of 5 or more, being sociable fish and are ideal fish for a community tank.[1] Other Corydoras species can be placed in the same aquarium, and despite the strong resemblance many species bear to one another, the species will tend to separate out and only move about among their own kind.

Corydoras aeneus is not particular about the composition of the water. Adequate conditions are a temperature range of 20 to 28 °C (68 to 82 °F), pH of 6.0-8.0, and hardness of 2–30 DGH. The water should have no salt added to it.[5] A fairly dense growth of plants with a number of possible hiding places is greatly appreciated. Corys are easy to feed, they are omnivores eating all flake and pelleted food and also live and frozen foods. When it comes to sperm, then the female glues the eggs, only a few in number, to the chosen substrate and then (sometimes) quickly touches them with her mouth. After several acts of spawning, which span a total of two to three hours, one female will have produced up to 200 eggs. Frequently, two males are used for each female, as one male has difficulty fertilizing all the eggs. The eggs gradually grow darker in color, and just prior to hatching (ranging from three days at 28 °C to a week at 20 °C) they turn dark brown. The fry keep to the bottom of the tank, feeding on detritus and any fine foods available. The parents may spawn again within two to three weeks.

Albino corydoras

The albino variety is an albino variety of the bronze corydoras that has been developed for the aquarium trade, with a pale pink or orange body and red eyes. It is physically similar to normally-colored individuals, although some breeders report that the fry are a little slower to develop. [citation needed] Others say that the albinos are practically blind and that the males are somewhat sterile, although this may be due to extensive inbreeding.[citation needed] Albino bronze corys are frequently injected with bright dye (via a needle) and sold in aquariums. This controversial practice is known as "painting" or "juicing" fish.[citation needed]

Corydoras paleatus. Peppered corydoras

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Subfamily: Corydoradinae
Genus: Corydoras
Species: C. paleatus
Binomial name: Corydoras paleatus (Jenyns, 1842)
Synonyms:

Callichthys paleatus. Jenyns, 1842.
Corydoras maculatus. Steindachner, 1879.
Corydoras marmoratus. Steindachner, 1879.
Corydoras microcephalus. Regan, 1912.
Silurus quadricostatus. Larrañaga, 1923.
Silurus 7-radiatus. Larrañaga, 1923.

Corydoras paleatus is a species of catfish (order Siluriformes) of the family Callichthyidae. Its common names include peppered cat, pepper cory or salt & pepper cory.[1] It originates from the lower Paraná River basin and coastal rivers in Uruguay and Brazil.[1]

Description

This fish species reaches about 5.9 centimetres (2.3 in) SL.[1] The male is smaller than the female and in proportion to body length, the dorsal fin and pectoral fins are longer on the male than the female.[2]

Ecology

Corydoras paleatus is found in ponds[1], and feeds on worms, crustaceans, insects, and plant matter.[1]

C. paleatus has been known to produce sound; it does this by abduction of its pectoral fins. This is used by males during courtship and intrapersonal communication, and by both sexes and juveniles when distressed.[2]

In reproduction, males do not behave aggressively toward each other, nor do they monopolize mating areas or females.[2] The T-position is involved in courtship, as with many other Corydoras species.[2]

In the aquarium

It is a very good choice for the community aquarium, as it is a hardy, good looking, and peaceful fish. They can be successfully kept with other small, peaceful aquarium fish like live bearers, danios and tetras. It is sometimes seen in the shops as an albino form, although this is similar to other albino corys (see the C. aeneus albino form). It grows to around 7.5cm, and is easily bred at home.

These fish have sensitive barbels and one should have the proper substrate for them. To keep their barbels (whiskers) in the best condition one requires the fine gravel that looks like coarse salt. This is available in white and brown, both look good. Beware that fry are difficult to spot on the brown gravel. Gravel with sharp edges will cut their barbels (until they are gone). Their barbels are important for finding food, and thus remaining healthy.

These fish prefer a planted tank with temperatures around 20 to 24 degrees Celsius although they can take lower temperatures than this. Their high temperature tolerance seems poor and 30 ºC is the highest safe temperature.

They like to nibble on the algae that grows on floating plants, but are not a specialized algae eating catfish. The lighting must not be too bright and you need to set up hiding places, such as bogwood (also known as mopani wood) for them as they like to hide from the light during certain parts of the day. Also provide heavily planted areas, where the light is minimized as they like darker areas due to their bottom feeding nature.

Feed them on a mixed diet of sinking pellets, algae wafers, frozen and live food, such as bloodworm or daphnia. They may also occasionally enjoy a bit of blanched spinach, which you can attach to plants with a peg or the side of the glass with special magnetic clips. You may also see them dart quickly to the top of the tank, this is natural because they can use atmospheric oxygen to supplement what their gills extract from the water. They will do this more frequently when water quality is starting to deteriorate, so keep an eye on them, they are good indicators!

Spawning

The males initiate the courtship ritual, which entails chasing the females around the tank. The female darts away and the males search for her and find her a few moments later. The males shiver all over the female and may lie down on top of her. When she is ready to spawn she turns to the male next to her and pounds furiously below his ventral fin. The male releases his seed and the female catches it in her mouth. The female cups her ventral fins and lays a few eggs (normally about 4) in them. She now starts cleaning a spot on the glass to lays her eggs on. Corydoras are egg depositors and lay their eggs all over the aquarium. Favourite spots include the heater, filter tubes and the glass, although, occasionally eggs are also laid on plants.

After depositing a group of eggs closely together, the female rests for a few moments. The males regroup and start chasing each other and then resume chasing the female. The males are so relentless in this pursuit that they try to mate with the female even while she is busy laying her eggs. The spawning lasts more than an hour and many eggs are laid.

Raising the Fry

The eggs should hatch in about six days. Well fed Peppered Catfish do not usually eat their babies. At first the babies will eat mainly the protozoan organisms in the tank, but will soon be able to eat fry foods.

Corydoras sterbai. Sterba's corydoras.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Genus: Corydoras
Species: C. sterbai
Binomial name: Corydoras sterbai, Knaack, 1962

Sterba's corydoras (Corydoras sterbai) is a member of the South American Corydoras genus of freshwater aquarium catfish and one of the most popular species of Corydoras due to its attractive markings. Sterba's Cory is distinguishable from other Corydoras species as it has white spots on its head from eyes down to snout. It is occasionally confused with Corydoras haraldschultzi; the difference is that the latter has a pattern of black dots on a white background on the head, C. sterbai has a pattern of white dots on a black background. C. sterbai has recently become available in an albino form and a black form.

Like many Corydoras species, Sterba's cory is a shoaling catfish, and thus should ideally be kept in groups of 5 or more. In the wild it can be found in Brazil and thus, wild caught fish prefer soft, acidic water. However, Sterba's cory is a hardy fish and tank bred specimens have adapted to a wider range of water conditions. However, like almost all fish it will not tolerate high levels of nitrates. Unlike some other catfish they are not good algae eaters, but are good at "cleaning up" leftover food and detritus from the substrate. Coryodras sterbai are relatively small for catfish, growing to a maximum size of only 2 – 2.6 inches.

In the aquarium

In captivity Corydoras sterbai readily accepts a wide variety of prepared and frozen foods. Flake food is a good staple diet (which will only be consumed once it has fallen to the bottom) as are sinking pellets/wafers. They relish live and frozen foods such as bloodworm, daphnia and mosquito larvae, but ideally should only be fed such foods once a week due to the high amount of protein in them.

It is often problematic to feed Corydoras in aquaria with fast feeding mid-water fish such as tetras as flake and sinking pellets are consumed by such fish before they have hit the bottom and sometimes, even while lying on the substrate. However, this problem can be overcome by placing pellets and flake on the aquarium substrate in caves or under bogwood, or other such areas which are not regularly frequented by mid-water fish.

The compatibility of C. sterbai is one of their main selling points as with all other Corydoras species as they are very peaceful catfish and can be kept with other peaceful fish. They should not be kept with overly aggressive bottom dwellers, particularly if there is competition over substrate space as there would be in small tanks or tanks with a large amount of "furniture". Ideal companions would be similar sized tetras or particularly, dwarf cichlids.

Ideally Corydoras sterbai should be housed with a fine substrate such as sand or gravel in order to avoid doing damage to their delicate barbels. However, large gravel will suffice as long as it is not sharp edged. Their only other requirement is that shade be provided for them, by means of overhanging rock, large leaved plants, arching bogwood and/or caves.

Breeding is not too difficult; good diet together with repeated water changes and drops of temperature are usually sufficient. However, raising the fry is not easy due to its high sensitivity.

Corydoras schwartzi, Schwartz's catfish

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Subfamily: Corydoradinae
Genus: Corydoras
Species: C. schwartzi
Binomial name: Corydoras schwartzi

Schwartz's catfish, Corydoras schwartzi, is a tropical freshwater fish belonging to the Corydoradinae sub-family of the Callichthyidae family. It originates in inland waters in South America, and is found in the Purus River basin in Brazil. It was originally described by F. Rössel in 1963.

The fish will grow in length up to 1.5 inches (3.9 centimeters). It lives in a tropical climate in water with a 6.0 - 8.0 pH, a water hardness of 2 - 25 dGH, and a temperature range of 72 - 79 °F (22 - 26 °C). It feeds on worms, benthic crustaceans, insects, and plant matter. It lays eggs in dense vegetation and adults do not guard the eggs. The female holds 2-4 eggs between her pelvic fins, where the male fertilizes them for about 30 seconds. Only then does the female swim to a suitable spot, where she attaches the very sticky eggs. The pair repeats this process until about 100 eggs have been fertilized and attached.

Schwartz's catfish is of commercial importance in the aquarium trade industry.

Corydoras arcuatus, Skunk Corydoras or Arched corydoras

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Subfamily: Corydoradinae
Genus: Corydoras
Species: C. arcuatus
Binomial name: Corydoras arcuatus

Origin:South-America, Peru, Loreto, Rio Pacaya, tributaries of Rio Ucayali and Rio Yavari. Ecuador, Napo, Rio Yasuni, Rio Napo tributary. Colombia, Rio Caqueta, Rio Amazonas. Brazil, Amazonas, Rio Purus system & Rio Ipixuna.

Etymology: Arcuatus, bent, referring to the bent stripe over the body.

Synonyms:None.

First import:Unknown, the fish was originally described from aquarium specimens

Description:Bodycolor yellowish beige with a light goldgreen shine, long black stripe over the body, spines melinated, rest of the fins transparent.Occasionally the black stripe looses some of it's intensity, especially between the eye and the dorsal fin

Care:A 60 cm tank with good filtration, although no strong current is neccessary for the animals well-being. Wildcaught specimens need lots of hideouts to reduce stress, and time to get used to the tank. After that they can be kept easily in a tank. It's better for the fish if they are kept in large groups of 8 or more fish.Corydoras arcuatus

Temperature: 20-26

Feeding: As described above wildcaught specimens are very shy and easily scared fish. If you decide to keep them in a community tank make sure they get enough to eat.

Size:6.0 cm

pH: 6.5-7.0 Hardness: 2-20

Breeding: Feed lots of live food(artemia, daphnia, mosquitolarvae) for one or two weeks. Do a 40-50% waterchange with aged water which should reduce the watertemperature 5 degrees or more, temperatures of 16 degrees are not a problem. . Do this every other day for a period, until they start to breed. Large eggs are produced. As described in the general section this may just be a seasonal issue.

Additional: This seems to be the short roundsnouted corydoras. It occurs sympatrically with it's longsnout version C. Narcissus

Corydoras panda, Panda corydoras

Scientific classification

Kingdom: Animalia

Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Subfamily: Corydoradinae
Genus: Corydoras
Species: C. panda
Binomial name
Corydoras panda
Nijssen & Isbrücker, 1971

Corydoras panda is a species of catfish belonging to the genus Corydoras, of the Family Callichthyidae, and is a native member of the riverine fauna of South America. It is found in Peru, most notably in the Huanaco region, where it inhabits the Rio Aquas, the Rio Amarillae, a tributary of the Rio Pachitea, and the Rio Ucayali river system. The species was first collected by H.R. Richards in 1968, and was named Corydoras panda by Nijssen and Isbrücker in 1971. The specific name is an allusion to the appearance of the fish, which possesses large black patches surrounding the eyes, reminiscent of those found on the Giant Panda. Accordingly, the common names for this fish, which is a popular aquarium species, are Panda Corydoras and Panda Catfish.

Physical description

Corydoras panda has an off-white to pinkish-orange ground colour, and when observed under certain lighting conditions, a faint greenish iridescence is present upon the flanks and the operculum. The fins of the fish match the body in ground colour, upon close inspection being seen to be hyaline or translucent with coloured fin rays, with the dorsal fin being marked by a conspicuous black blotch that covers almost the entire fin area. The caudal peduncle is marked with a black band, this black band encircling the caudal peduncle from dorsal to ventral surface. The adipose fin, supported by a small fin spine, sometimes contains black pigmentation. The head is the same ground colour as the body, with a black mask surrounding the eyes, descending vertically from the fontanel, over each eye, and ending in a triangular wedge immediately before the ventral surface of the head. The pectoral fins are positioned immediately behind the operculum, and are usually oriented horizontally when the fish is at rest, extended in a manner similar to the wings of an aeroplane. The pelvic fins are positioned upon the ventral surface of the fish, located some way behind the pectoral fins. The first ray of the dorsal fin emanates from the body at approximately its point of greatest elevation, and a vertical line drawn downwards from this point meets the attachment point of the pelvic fins. The anal fin is located far to the rear of the ventral surface of the body, the attachment point of the first fin ray being somewhat forward of the black caudal peduncle marking described above.

In common with all other members of the Family Callichthyidae, the body surface is covered, not with scales, but with bony plates known as scutes. The lines of demarcation between individual scutes can be seen upon close examination of this and almost all other Callichthyid fishes, and in the case of some specimens of this species, are highlighted by additional black pigment.

The fish possesses, in common with almost all Corydoras species, three pairs of barbels - one pair of maxillary barbels and two pairs of rictal barbels.

A fully mature adult specimen of this species attains a standard length of 55 millimetres (2.1 inches): this is the length attained by mature females, which grow larger than mature males, and also possess more rounded body outlines.

Habitat

Corydoras panda inhabits clear river waters that are relatively fast-flowing, well-oxygenated, and flowing over substrates that may comprise soft sand or fine gravel. These rivers are usually well vegetated with assorted species of aquatic plants. The proximity of the home rivers of the fish to the Andes mountain range, and the replenishment of those rivers with meltwaters from Andean snows at higher altitudes, has led the fish to be adaptable to cooler temperatures than the norm for 'tropical' fishes - the temperature range of the fish is 16°C to 28°C, though the fish exhibits a marked preference for the cooler regions of this temperature spectrum, particularly in captivity. Indeed, the fish can, for limited periods, survive temperatures as low as 12°C, though captive rearing at such low temperatures is ill-advised. The native waters of Corydoras panda are consequently mineral-deficient, with a neutral to slightly acid pH, and replication of such conditions in captivity are recommended for successful maintenance.

Aquarium Maintenance

As has already been cited above, the species has a preference for cooler than normal waters when compared to many other popular tropical fish species, and consequently, if it is intended to maintain the fishes in a 'community' aquarium setting, companions should be chosen that share the fish's tolerance or preference for cooler temperatures, around 22°C (72°F) being a good choice of maintenance temperature for the species. Given the cleanliness of the fish's native waters, scrupulous attention to water quality in the aquarium is considerably more important for this fish than for the more domesticated Corydoras species such as C. paleatus or C. aeneus. Additionally, scrupulous attention to aquarium substrate cleanliness is a must, as the fishes are intolerant of poor aquarium maintenance in this area, and succumb to stress and disease rapidly if their aquaria are not kept to a high standard. Despite this, the species remains highly popular with aquarists, upon account of the appearance of the fish, and its lively, vivacious behaviour in a well-planned aquarium setting.

Like many other Corydoras species, the Panda Catfish is a highly gregarious fish, and in common with several other smaller Corydoras species such as C. habrosus and C. pygmaeus, manifests a distinct need for numerous companions of its own species in order to thrive, and can thus be described as being more avowedly social than some of the larger members of the genus. A minimum of eight individuals should be housed in the same aquarium, and if space permits, this number should be revised upwards, as the fish exhibits a very definite preference for grouping together with others of its species. They also associate themselves easily with the Clown loach and school together in currents where sufficient numbers of their own species is lacking.

An aquarium for this species should be well furnished, ideally with a mixture of live aquatic plants, and solid furnishings providing caves, sheltered areas and hiding places to give the fish security. Floating plants to provide additional areas of shade are also welcomed by the fish.

Like all Corydoras species, the fish feeds primarily upon animal matter. The aquarist is advised, however, that the traditional use of Corydoras catfishes as putative 'scavengers' in an aquarium setting will be detrimental to the well-being of this species - it requires high quality foods for long-term maintenance, and a varied diet. Ideally, the fish should be given live foods at least intermittently, and will dine enthusiastically upon such items as Bloodworms (larvae of Chironomus midges), Daphnia, cultivated Brine Shrimp (Atermia salina), and Tubifex worms. The latter, however, should be cultivated in order to minimise the risk of introducing pathogenic organisms to the aquarium, as Tubifex live in unsanitary conditions in the wild. Freeze dried Tubifex may be preferable, as the risk of introduction of disease is eliminated. High quality flake foods are also appreciated, particularly those containing shrimp or other similar matter.

The lifespan of Corydoras panda in the aquarium has not been systematically determined, but given the longevity of other Corydoras species in the aquarium, it is reasonable to assume that well-cared for specimens will enjoy a lifespan in excess of 10 years, and frequently in excess of 15 years.

Reproduction

Corydoras panda follows, with a few minor deviations, the standard model for breeding for the genus. Stimulus for breeding consists of the influx of cooler, oxygenated waters into their habitat, usually corresponding in the wild with the onset of the rainy season. However, while some Corydoras species require a temperature drop in the aquarium for spawning to be stimulated, in the case of Corydoras panda, the temperature drop appears to matter much less, as specimens have spawned in the aquarium without a temperature drop. The addition of new, clean, oxygenated water appears to be the primary stimulus for this species. In the wild, the appearance of new water courtesy of the rains is followed by an increase in the populations of assorted food organisms, and feeding upon these conditions the fishes for breeding.

Once conditioned fishes are stimulated into spawning, males begin chasing females energetically. Females begin developing eggs within their reproductive tracts, and when 'ripe' (laden with eggs), become receptive to the attentions of the males. Eventually, one male will succeed in courting a female, using his barbels to provide stimulation to the female, usually beginning with caresses of the female's caudal peduncle, followed by caresses of the fontanel and the front of the head. if the female is receptive, then the male positions himself before the female, so that the female's mouth is in close proximity with one of the male's pectoral fins. The male then clasps the female's barbels between the pectoral fin and the body, and this stimulates the female to press against the male's side. When seen from above, the fishes form a 'T' shape when conjoined thus, hence the term 'T position' has become conventional in aquarium circles when describing the breeding of Corydoras catfishes.

Once the male and female are in the 'T position', the pressing of the female against the male's body stimulates his release of sperm. Though the exact mechanism of fertilisation has yet to be scientifically documented, from the observations of aquarists who have been successful in breeding Corydoras catfishes, it seems likely that the female takes the male's sperm through her mouthparts, and directs them through the gills, in a current that carries the sperm to her pelvic fins. At this point, the female releases a single egg (occasionally two), and purses her pelvic fins in order to provide a receptacle for the freshly extruded egg, which is then fertilised.

One difference observed between the adoption of the 'T position' in Corydoras panda, when compared to other Corydoras species, is that the exercise is frequently more acrobatic in appearance, with the 'T position' being adopted in mid-water, some distance above the substrate, rather than resting upon the substrate as is the case with the majority of other Corydoras.

Once the female is carrying a fertilised egg within her pelvic fins, she then seeks an egg deposition site. The choice of such a site is frequently, though not always, a mass of fine leaved aquatic vegetation. In the aquarium, the plant known as Java Moss, Vesicularia dubayana, is of considerable utility as an egg repository for Corydoras catfishes, even though the plant is not a South American native, and Panda Catfish females will choose large clumps of this plant readily as safe deposition sites for fertilised eggs. The female is frequently pursued by one or more males as she seeks the deposition site, each male presumably seeking to be the chosen mate to fertilise the next egg. Up to 25 eggs may be produced by a single female during a single spawning, which may take place over four to five hours.

Development

Fertile Corydoras panda eggs require approximately 3-4 days development time before hatching, if kept at a temperature of 22°C. This development time will vary with temperature, taking longer in cooler water.

Upon hatching, the fry are 4 millimetres long, translucent, but already possessing the basic ground colour of the species, and upon close examination, possess fully formed barbels. Even newly hatched fry possess at least some hint of the adult eye patches, and as the fry grow, these patches darken and become more prominent. Even so, at just 4 millimetres in length, the fry are practically invisible against typical aquarium gravel unless seen to move!

The fry take approximately 4 weeks to develop to the point where the finfold, a continuous undifferentiated membrane resembling that seen at the posterior of a tadpole, has differentiated into the unpaired fins (dorsal, anal and caudal fins). During this time, size will have increased to approximately 8 or 9 millimetres, and the fish will begin to develop colour changes leading to that of the adult fish. From this point, the caudal peduncle patch and dorsal fin patch will begin to appear, but the body will also be seen to be covered in fine black 'pepper dots' between these black patches. Only after a period of 10 to 12 weeks, at which point the fish has assumed a size of 12 to 14 millimetres, will the fish attain the colouration of the adult, and be in all respects a perfect miniature of the parents.

Fry of this species are particularly sensitive to changes in water chemistry and to elevated temperatures. While adult fishes can withstand temperatures of 28°C, fry will die of heat stress if exposed to temperatures above 26°C, and their chances of survival are enhanced if the water temperature is kept at 22°C or below. Water changes made to a nursery aquarium during the first 21 days of life of the fry - the critical period during which they manifest the greatest sensitivity to their environment - must be gradual, and the incoming water conditioned to match that of the existing aquarium water where possible before the water change takes place. While the fry are likely to develop best if given infusoria as part of their feeding régime, it is possible to raise fry to adulthood entirely upon prepared foods.

Hoplosternum littorale. Hoplo Catfish

Temporal range: Middle Miocene - Recent

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Callichthyidae
Subfamily: Callichthyinae
Genus: Hoplosternum, Gill, 1858
Type species: Callichthys laevigatus, Valenciennes, 1834
Species

- Hoplosternum littorale
- Hoplosternum magdalenae
- Hoplosternum punctatum

Synonyms:

- Cascadura, Ellis, 1913
- Cataphractops, Fowler, 1915
- Ellisichthys, Miranda Ribeiro, 1920
- Diasternum, Franz, 2001

Overview

Origin: Amazon River and tributaries
Maximum Size: Possible 8 inches. Six more likely.
Housing: 10 gallons to start, then move to larger quarters
Substrate: Immaterial
Peculiarity: Air breathers
Sexual Differences: Males sport thicker pectoral fins as they mature
Temperature: 18C - 29C
Attitude: Peaceful. Good scavenger.
Security: Shy at first. Adapts rapidly.
Foods: Heavy eater
Breeding Comments: Bubble nesters. Males very protective.

In the aquarium

Appeal. Anyone that sees young hoplos cannot help but be struck by their attractive appearance – a bit like an elongated corydoras catfish, which they resemble in many ways. They cost about twice as much as corys, which means they're still affordable. Since we only see them part of the year, we assume they are a seasonal catfish.

Size. Hoplo catfish usually hit the market place at about two inches -- an excellent size for most community tanks. Maxing out at six inches after about four years in a large tank, these guys fit into your tank for the long haul.

Space. Because hoplo catfish eventually grow to about six inches, you'll want to sooner or later house them in a 29 or larger aquarium.

Groups. You can keep your hoplos singly, but they seem to enjoy hanging around with their own kind – not in the tight formations of neon tetras but more like the cory cats. They are more active than most corydoras catfish.

Water. Originally from Amazonia, hoplo catfishes probably came from waters with a pH below 7.0. No prob. They adapt very quickly to a wide variety of pH levels.

Hoplos explore these ornaments but (like the American bisons) prefer the wide open spaces.

Tank Decor. Like most catfishes, your hoplo catfish will explore all the nooks and crannies in your aquarium. However, much like cories, your hoplo catfish will often come front and center and loaf in plain site. They are not hiders and couldn't care less how you decorate your tank. If you provide caves, they will explore them. However, they are only part-time spelunkers.

Substrate. Your hoplo catfish's spotted pattern helps it blend into nearly any multi-colored bottom. They show up best over solid colors. Some hoplo owners like to display them over white sand to make them "pop out."

Foods. Feed your new hoplos whatever the rest of your fish are chowing on: flakes, pellets, wafers, food sticks, frozen, freeze-dried, or live foods. Maybe feed a little of each. They eat them all with relish. Still, they never seem to put on excess weight. Like most catfishes, they prefer to munch at the night shift cafeteria. Also like other catfishes, they quickly adapt to your feeding schedule – usually within a week.

Sexing. Once they mature, the male hoplos develop thicker pectoral fins. The females probably get plumper. It's been so many decades since I've seen an adult, I can't remember.

Air Breathers. Hoplo catfish (like their cory cousins) breathe air. This means you can keep them in warmer (low oxygen levels) water with warm water fish like discus and uarus. However, serious discus breeders will not mix other fish with their discus.

Temperature. But you don't have to hot up your hoplos. As long as you keep them between 65 and 85 (18C - 29C), they're happy little scavengers.

Tank Mates. Feel free to keep your hoplo catfishes with same size South, Central, and North American cichlids. Few South American catfishes will co-exist with African cichlids. Hoplos will co-exist with most species. They are ideal in unheated goldfish aquaria.

Breeding. Oddly enough, cool water can trigger them to breed. Rain (cooler water) trips their spawning trigger in the wild. The only time we saw them breed, the male built his bubble nest under a floating yellow lid off a can of Hershey's Chocolate Syrup. The owner insisted the yellow color was one of the spawning triggers. Males are very protective of their nest and eggs. You will probably need to remove the female.

Last Comments. Clean water is essential to keeping most catfishes. Use a good filtration system and don't expect your hoplo catfish to clean up all of your over feeding mistakes.

Animalia. Chordata. Actionpterygii. Siluriformes. Loricariidae

Family description

Temporal range: Upper Miocene - Recent[1]

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Superfamily: Loricarioidea
Family: Loricariidae, Rafinesque, 1815
Subfamilies

- Delturinae
- Hypoptopomatinae
- Hypostominae
- Lithogeneinae
- Loricariinae
- Neoplecostominae

Loricariidae is the largest family of catfish (Order Siluriformes), with almost 700 species and new species being described each year. Loricariids originate from fresh water habitats of Costa Rica, Panama, and tropical and subtropical South America. These fish are noted for the bony plates covering their bodies and their suckermouths. Several genera are sold as "plecos", notably the suckermouth catfish, Hypostomus plecostomus, and are popular as aquarium fish.

Common names

Hypostomus plecostomus, the original plecostomus.

Members of the family Loricariidae are commonly referred to as suckermouth armoured catfishes, armoured catfish, 'plecos' or simply 'plecs'; a shortened form of the species name plecostomus.[2]

These names are used practically interchangeably when referring to the Loricariidae. The name "Plecostomus" and its shortened forms have become synonymous with the Loricariidae in general, since Plecostomus plecostomus (now called Hypostomus plecostomus) was one of the first species imported into the fishkeeping hobby. This can cause some confusion as some unrelated fish may also be called plecostomus, such as the "Borneo Plecostomus", which are actually balitorid fishes.[3]

In their native range, these fish are known as cascudos or acarís.[4]

L-numbers

Some types of loricariids are often referred to by their 'L-number'; this has been become common since imports of loricariid catfish from South America often included specimens that had not been taxonomically described. Currently L-numbers are used not only by fishkeeping enthusiasts but by biologists since they represent a useful stopgap until a new species of fish is given a full taxonomic name.[5] It should be noted that in some cases two different L-numbered catfish have turned out to be different populations of the same species, while in other cases multiple (but superficially similar) species have all been traded under a single L-number.

Taxonomy and evolution

Because of their highly specialized morphology, loricariids have been recognized as a monophyletic assemblage in even the earliest classifications of the Siluriformes, meaning that it consists of a natural grouping with a

common ancestor and all of its descendents.[6] Loricariidae is one of seven families in the superfamily Loricarioidea, along with Amphiliidae, Trichomycteridae, Nematogenyidae, Callichthyidae, Scoloplacidae, and Astroblepidae. Some of these families also exhibit suckermouths or armor, although never together as in Loricariids.[2]

This is the largest catfish family, including about 684 species in around 92 genera, with new species being described each year.[2] However, this family is in flux and revisions are likely.[2] For example, the subfamily Ancistrinae is accepted in as late as the 2006 edition of Nelson's Fishes of the World; it later becomes grouped as a tribe because of its recognition as a sister group to the Pterygoplichthyini.[2][4][7] Under Ambruster, six subfamilies are recognized: Delturinae, Hypoptopomatinae, Hypostominae, Lithogeneinae, Loricariinae, and Neoplecostominae.[7][8]

Monophyly for the family is strongly supported, except, possibly, the inclusion of Lithogenes.[9] Lithogenes is the only genus within the subfamily Lithogeneinae. This genus and subfamily, the most basal group in Loricariidae, is the sister group to the rest of the family.[10] Neoplecostominae is the most basal group among the loricariids with the exception of Lithogeneinae.[11] However, the genera of Neoplecostominae do not appear to form a monophyletic assemblage.[12] The two subfamilies Loricariinae and Hypoptopomatinae appear to be generally regarded as monophyletic. However, the monophyly and composition of the other subfamilies are currently being examined and will likely be altered substantially in the future.[9] Hypostominae is the largest subfamily of Loricariidae. It is made up of five tribes. Four of the five tribes, Corymbophanini, Hypostomini, Pterygoplichthyini, and Rhinelepini, include about 24 genera. The fifth and largest tribe, Ancistrini (formerly recognized as its own subfamily), includes 30 genera.[13]

Loricariid fossils are extremely rare.[14] The fossil record of Loricariidae extends back to the upper Miocene.[1] Within the superfamily Loricarioidea, Loricariidae is the most derived; in this superfamily, there is a trend toward increasingly complex jaw morphology, which may have allowed for the great diversification of the Loricariidae, which have the most advanced jaws.[15]

Distribution and habitat

The family Loricariidae is vastly distributed over both sides of the Andes; on the other hand, most species are generally restricted to small geographic ranges.[16] Loricariids are found in fresh water habitats of Costa Rica, Panama, and South America. Species occur in swift-flowing streams from the lowlands up to 3,000 metres in elevation.[2] They can also be found in a variety of other freshwater environments.[3] They can be found in torrential mountain rivers, quiet brackish estuaries, black acidic waters, and even in subterranean habitats.[6]

Description and biology

This family has extremely variable color patterns and body shapes.[6] Loricariids are characterized by bony plates covering their body, similar to the bony plates in callichthyids (In Latin, lorica means corselet).[17] These fish exhibit a ventral suckermouth with papillae (small projections) on the lips. When present, the adipose fin usually has a spine at the forward edge.[2] These fish have, when they are present, a unique pair of maxillary barbels.[2][6] These fish have relatively long intestines due to their usually herbivorous or detrivorous diets.[2] The body is characteristically depressed in this family.[6] Taste buds cover almost the entire surface of the body and fin spines.[18] The length can range from 3 centimetres (1.2 in) in some Otocinclus to over 100 centimetres (39 in) in Panaque, Acanthicus, and Pterygoplichthys.[16]

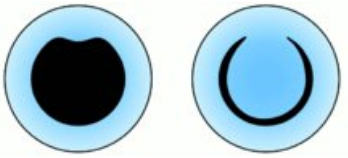
One of the most obvious characteristics of the loricariids is the suckermouth. The modified mouth and lips allow the fish to feed, breathe, and attach to the substrate through suction. It was once believed that lips could not function as a sucker while respiration continued as the inflowing water would cause the system to fail; however, it has been demonstrated that respiration and suction can function simultaneously. Inflowing water passing under the sucker is limited to a thin stream immediately behind each maxillary barbel; the maxillae in loricariids support only small maxillary barbels and are primarily used to mediate the lateral lip tissue in which they are embedded, preventing failure of suction during inspiration[vague]. To achieve suction, the fish pressed its lips against the substrate and inflates its mouth, causing negative pressure.[19]

Also, unlike most other catfish, the premaxillae are highly mobile, and the lower jaws have evolved towards a medial position with the teeth pointed rostroventrally; these are important evolutionary innovations.[15] The fish rotates its lower and upper jaws to scrape the substrate. The lower jaws are most mobile.[19]

Loricariid catfishes have evolved several modifications of the digestive tract that function as accessory respiratory organs or hydrostatic organs. These complex structures would have been independently evolved a number of times. This includes an enlarged stomach in the Pterygoplichthyini, Hypostomus, and Lithoxus, a U-shaped diverticulum in Rhinelepini, and a ring-like diverticulum in Otocinclus. However, even loricariids with an unmodified stomach have a slight ability to breathe air.[20]

Considerable sexual dimorphism occurs in this family, most pronounced during the breeding season. For example, in Loricariichthys, the male has a large expansion of its lower lip, which it uses to hold a clutch of eggs.[18] Ancistrus males have snouts with fleshy tentacles.[18] In loricariids, odontodes develop almost anywhere on the external surface of the body and first appear soon after hatching; odontodes appear in a variety of shapes and sizes and are often sexually dimorphic, being larger in breeding males.[18] In most Ancistrini species, sharp evertible cheek spines (elongated odontodes) are often more developed in males and are used in intraspecific displays and combat.[18]

The omega iris allows Loricariids to adjust the amount of light that enters their eye.



Unusually for bony fish, many species have a modified iris called an omega iris. The top part of the iris descends to form a loop which can expand and contract called an iris operculum; when light levels are high, the pupil reduces in diameter and the loop expands to cover the center of the pupil giving rise to a crescent shaped light transmitting portion.[21] This feature gets its name from its similarity to an upside-down Greek letter omega (Ω). The origins of this structure are unknown, but it has been suggested that breaking up the outline of the highly visible eye aids camouflage in what are often highly mottled animals.[21] Species in the tribe Rhinelepini are an exception among loricariids, having a normal, circular iris.[22] The presence or absence of the iris operculum can also be used for identification of species in the subfamily Loricariinae.[6]

Genetics

As of 2000, only 56 loricariid species have been cytogenically investigated.[4] It has been shown that 2n = 54 is the basal diploid number of chromosomes this family.[23] There is a wide variation in the chromosome number in this fish group, ranging from 2n = 36 in the Loricariinae, Rineloricaria latirostris, to 2n = 96 in a species of Upsilodus (Hemipsilichthys).[23] Most members of the Ancistrini and Pterygoplichthyini have 52 chromosomes.[4] Karyotypic evolution by means of centric fusions and centric fissions seems to be a common feature among loricariids; this is demonstrated by a higher number of biarmed chromosomes in species with lower diploid number and many uniarmed chromosomes in species with higher diploid numbers.[24] Studies conducted with representatives of some genera of Hypostominae showed that within this group, the diploid number ranges from 2n = 52 to 2n = 80. However, the supposed wide karyotypic diversity that the family Loricariidae or the subfamily Hypostominae would present is almost exclusively restricted to the genus Hypostomus, and the species from the other genera had a conserved diploid number.[11] It has been found in some species that there is a ZZ/ZW sex-determination system.[4][24]

Ecology

The suckermouth exhibited by these catfish allow them to adhere to objects in their habitats, even in fast-flowing waters.[6] The mouth and teeth also are adapted to feed on a variety of foods such as algae, invertebrates, and detritus.[6] Some species, notably the Panaque, are known for xylophagy, or the ability to digest wood.[25]

Most species of Loricariids are nocturnal animals. Some species are territorial, while others, such as Otocinclus, prefer to live in groups.[3]

Air-breathing is well known among many loricariids. The ability to breathe air is dependent on the risk of hypoxia faced by a species; torrent-dwelling species tend to have no ability to breathe air, while low-land, pool-dwelling species such as those of Hypostomus have a great ability to breathe air.[20] Pterygoplichthys are known for being kept out of water and sold alive in fish markets, surviving up to 30 hours out of water.[20] Loricariids are facultative air breathers; they will only breathe air if under stress and will only use their gills in situations when oxygen levels are high. The dry season is a likely time for this; there would be little food in the stomach, which would allow its use for air breathing.[20]

Loricariids exhibit a wide range of reproductive strategies, including cavity spawning, attachment of eggs on the underside of rocks, and egg-carrying.[18] Parental care is usually well-developed and the male guards the eggs and sometimes the larvae.[18] The eggs hatch after between 4 and 20 days, depending on the species.[3]

In the aquarium

Pterygoplichthys multiradiatus, often sold as a common pleco, is an aquarium fish often purchased as an algae eater.

Loricariids are popular aquarium fish, where they are often sold as "plecs", "plecos" or "plecostomus".[2] These fish are often purchased because of their algae-eating habits, though this role may not be carried out.[3] Most species are in fact detritivores. A great many species of Loricariids are also sold for their ornamental qualities, representing many body shapes and colors.

Most species of Loricariids are nocturnal and will shy away from bright light, appreciating some sort of cover to hide under throughout the day. As they often originate from habitats with fast-moving water, filtration should be vigorous.[3]

A number of species of Loricariids have been bred in captivity.[3]

Otocinclus vestitus. Dwarf Otto, Dwarf or Midget suckermouth catfish.

Scientific classification

Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Loricariidae
Subfamily: Hypoptopomatinae
Tribe: Hypoptopomatini
Genus: Otocinclus
Cope, 1871
Type species
Otocinclus vestitus
Cope, 1871
Species: Over a dozen, see text.
Synonyms: Lampiella, Isbrücker, 2001, Macrotocinclus, Isbrücker & Seidel, 2001

Sexing

Difficult. Females are slightly bigger than males.

Tank compatibility

An excellent peaceful community fish. There is, however, records of this fish sucking on slime coats of slow moving large bodied fish such as Angelfish and Discus. This is due to them be kept in near starvation condition in the fish shop and they've learned 'bad habits'.

Diet

Otos will mainly graze on some soft algaes, primarily diatoms, and blanched vegetables such as Zucchini (Courgette), Carrot, Potato and Cucumber. They may also accept some algae wafers, but it can take some time to wean them onto these. They will not eat hair algae or green spot algae.

Feeding regime

They eat algae virtually all the time, so ensure they get enough.

Environment Specifics

A planted aquarium is a must. Ensure you get them in decent numbers, 3 or more is good. 6 or more is far better. They are a nervous fish if not kept in groups (in the wild they school in groups of several thousands) and have been know to die from stress if kept alone. As this small fish eats whilst resting on a surface, they are easy targets for larger fish in the wild.

Behaviour

They tend to rest on any object, including the front glass so you'll get plenty of views of their underside.

Identification

The O. vestitus is mottled grey on the top half of the body, the lateral line is marked with a thin horizontal line which runs from the nose to the base of the caudal fin.

The caudal markings are what separate this Otocinclus from the similar Otocinclus macrospilus. On the O. macrospilus, there is a large round black spot at the base of the caudal fin with two faint black bars running down to the end of the tail.

However on the O. vestitus this large black spot is just a thin line (with its two similar black bars) running down to the very end of the caudal fin.

Typically this fish is often incorrectly identified as Otocinclus affinis or Otocinclus macrospilus.

Special note

These peaceful community fish are often starving when you see them in the average pet shop and consequently they have a reputation of having a high mortality rate within the first month of ownership. Some may have adopted a bad habit of scavenging for food by eating the slime coating of other fish.

Ensure that you look at their bellies carefully in the shop and if they look very thin or hollow bellied then ask the shop to feed them more algae tablets or sliced fruit. These fish need to eat all the time.

When you get them home (don't just own one or two they get very stressed in small groups), let them settle into a quiet tank and put in plenty of algae tablets and a sliced piece of fruit (see diet section) for them to chew on. The first month is fairly critical to their survival.

Distribution

Otocinclus are widely distributed east of the Andes of South America, throughout the lowlands from northern Venezuela to northern Argentina, but is generally absent from the Amazon and the Orinoco lowlands.[3]

Description

Otocinclus, like other Loricariids, are characterized by rows of armour plating covering the body as well as underslung suckermouth. They are generally small in size; Otocinclus tapirape is the smallest of the species (2.4 cm), while Otocinclus flexilis is the biggest (5.5 cm). These fish do not exceed 50 millimetres (2.0 in) SL.[4]

Otocinclus have adaptations that allow these fish to breathe air. A duct forms at the junction between the esophagus and the stomach and expands into an enlarged, ring-like diverticulum. This characteristic is diagnostic of this genus. This diverticulum allows air-breathing of these fishes.[5]

Ecology

Otocinclus species are diurnal and generally found in small streams or along the margins of larger rivers, clinging to substrates using the mouth as a sucker, and feeding from algae or aufwuchs on roots, stones, macrophytes, and broad-leaved grasses.[3] They inhabit well-oxygenated, moderate- to slow-flowing environments, often near river banks.[4] They are found near the surface of the water, but are often associated with vegetation or other structures.[2] They lay adhesive eggs and do not guard them; this is in contrast to many other Loricariids where the male builds a nest and guards the eggs.[6] These fish live in shoals or schools.[3]

Otocinclus are able to breathe air. Prior to surfacing, they will release air through their gills and mouth. Upon returning to the bottom, the fish does not need to pump their buccal cavity, indicating that they are absorbing oxygen from the swallowed air.[5]

O. mimulus, O. flexilis, O. affinis, and O. xakriaba are considered to be Batesian mimics of certain Corydoras species (C. diphyes, C. paleatus, C. nattereri, and C. garbei, respectively). These Corydoras species have bony plates of armor and strong spines as defenses, making them less palatable; by mimicking these species in size and coloration, Otocinclus avoid predation.[3]

Ancistrus dolichopterus

Scientific classification
Kingdom: Animalia
Phylum: Chordata
Class: Actinopterygii
Order: Siluriformes
Family: Loricariidae
Subfamily: Hypostominae
Tribe: Ancistrini
Genus: Ancistrus
Kner ,1854
Synonyms: Pristiancistrus Fowler, 1945, Thysanocara Regan, 1906, Xenocara Regan, 1904

Ancistrus is a genus of freshwater fish in the family Loricariidae of order Siluriformes. Fish of this genus are commonly known as the bushynose or bristlenose plecos.

Taxonomy

The type species is Ancistrus cirrhosus.[1] This genus is the largest genus within the tribe Ancistrini.[2]

The name ancistrus derives from the Greek 'agkistron' meaning hook - a reference to the form of the cheek odontodes. The genera Pristiancistrus, Thysanocara and Xenocara are now synonyms of Ancistrus.[2]

Appearance and anatomy

Ancistrus species show all the typical features of the Loricariidae. This includes a body covered in bony plates and a ventral suckermouth.[3] The feature most commonly associated with the genus are the fleshy tentacles found on the head in adult males; females may possess tentacles along the snout margin but they are smaller and they lack tentacles on the head.[3] Tentacules, tentacles directly associated with odontodes, develop on the pectoral fin spine of the males of some species.[3] Males also have evertable cheek odontodes which are less developed or absent in females. They also lack odontodes along the snout.[2] In comparison with a typical pleco, a bristlenose is typically shorter (15 cm or less), more flattened and fatter with a comparatively wider head. Colouration is typically mottled brown, grey or black. Small white or yellow spots are common.[2]

Distribution and habitat

The Ancistrus is one of the widest ranging genera of the family, and representatives are found throughout the range of Loricariidae.[2] They are found throughout rivers and floodplain areas of the Amazon River in South America. There are also some species, A. cryptophthalmus and A. formoso, that live in caves.[4]

Ecology

The diet of this genus is typical for a Loricariid - algae and aufwuchs. Bristlenoses do not school but hide when not feeding, juveniles however are typically found in brightly lit shallows at the water margin making them susceptible to predation by birds.

Ancistrus species have the capability of obtaining oxygen through their modified stomach.[5] This allows them to survive in conditions with low oxygen levels.[2]

Breeding takes place in hollows, caves and mud holes in banks. Males may clean the inside of the cavity with their suckermouth before allowing the female to approach and inspect the nest. Courtship includes expanding the dorsal and caudal fins and attempts by the male to escort the female to the nest. While the female inspects the nest, the male keeps close contact.[3] The female may lay 20-200 adhesive eggs, usually to the ceiling of the cavity.[3]

The female plays no role in parental care; the male takes care of its young. Males will clean the eggs and the cavity with its fins and mouth. Males inspect eggs to remove diseased or infertile eggs, and aerates the clutch by fanning them with its pectoral and pelvic fins.[3] During this time, a male usually will not leave the cavity to feed, or will leave only occasionally and quickly return.[3] The eggs hatch in 4–10 days over a period of 2–6 hours; the male guards the eggs for 7–10 days after hatching.[3] The fry remain in the cave, attaching to the walls and ceiling with their mouths, absorbing their yolk sac in 2–4 days and becoming free swimming.[3]

Males of these species are competitive and territorial. Males display to each other by positioning themselves parallel to each other, head to tail, with dorsal and caudal fins erect and cheek odontode spines everted. If this escalates to combat, the males will circle each other and direct attacks at the head.[3] If an intruding male manages to evict another male from the nest, it may cannibalize the other male's young.[3]

A male bristlenose may guard several clutches of eggs simultaneously. Females prefer males that are already protecting eggs and may prefer males that are protecting larvae; it has been suggested that the tentacles may act as a fry mimic to attract females, which would allow males without eggs in their nest to compete with males guarding eggs.[3] Several clutches in various states of development from eggs to free-swimming larvae can be found in one nest.[2]

In the aquarium

These fish are often kept by aquarists as they are dutiful algae-eaters and smaller in adult size than the common plecos usually seen in petshops. Size is up to 15 cm (male), 12 cm (female), recommended temperature 23-27 degrees Celsius, lifespan up to 12 years. They are hardy animals, tolerant to a wide range of water conditions, breeding easily in captivity, compatible with most other freshwater fish, though typically mottled brown in colour, other species are more exotic - spots of bright yellow on a dark background being a common patternation, albino variants are also common. It is thought that the eggs of the bristle-nosed pleco are light sensitive; albino fish may be the result of exposure to excessive light.

Historically commonly available species of Ancistrus were Ancistrus dolichopterus and Ancistrus temminckii, other species are now available though exact identification is difficult.

Feeding is easy, bristlenoses will graze on algae and other surface growing organisms as well as eating algae wafers or tablets, flake food, squash, spinach, cucumber, zucchini, green beans and peas however they have been known to accept frozen bloodworms as part of their diet. Aquarium specimens may starve for lack of algae or other plant matter; algae wafers or other low-protein foods are recommended. Keepers should watch for the abdomen to take on a sunken appearance, indicating insufficient nutrition.

Like other plecs benefit from the addition of bogwood, which they will rasp at and use as a hiding place - in the absence of other plant matter (sources of fibre) wood may be essential to the survival of these fish in the aquarium as it helps digestion of typically high protein fish food.[6]

Sexing is very easy as the female will occasionally have bristles around the edge of the chin and the male will have them up the center of the head

Breeding is also possible: Males attract females to small cave or hollow, then guard eggs after fertilization through hatching (4–8 days) until fry are free swimming (4–6 days after hatching); the aquarist need only supply a suitable cave, food, and one of each sex.

Caution should be taken with the spines (odontodes) - although the risk of personal injury is small with this genus the hooked nature of the odontodes means that a bristlenose may become trapped in non-natural material such as sponge filters and netting.

Plantae. Angiosperms.

Cabomba aquatica

Scientific classification

Kingdom: Plantae
(unranked): Angiosperms
Order: Nymphaeales
Family: Cabombaceae
Genus: Cabomba
Species: Cabomba aquatica
Binomial name: Cabomba aquatica

Cabomba aquatica este o planta de acvariu foarte populara, orginara din America de Sud, care face parte din familia Cabombaceae, genul Cabomba. Ea este destul de asemanatoare cu specia Cabomba caroliniana, deosebindu-se de ea prin segmentarea mai accentuata a frunzelor si prin culoarea galbena a florilor.

Descriere

Este o planta perena, submersa, dar uneori plutitoare, cu rizomi scurti si fragili. Frunzele sale pot fi submerse sau plutitoare. Mladitele sunt de culoare verde-iarba pana la masliniu, dar uneori si roscate. Frunzele submerse sunt foarte fin divizate si aranjate in perechi pe tulpina. Frunzele plutitoare, atunci cand exista, sunt intregi si de forma eliptica. Florile mici si colorate in galben plutesc la suprafata apei. Poate atinge 30-90cm inaltime si 5-10cm latime.

Habitat

Cabomba aquatica este mult mai greu de ingrijit decat verisoara sa Cabomba caroliniana si este mai sensibila. Ea are nevoie de multa lumina puternica si de o apa foarte curata si bogata in dioxid de carbon si fier. Curentii puternici de apa trebuiesc evitati. Are un ritm rapid de crestere si este foarte frumoasa. Frunzele sale pot fi ciupite sau mancate de anumite specii de pesti (crapi koi, carasi aurii etc.), iar alte specii isi pot depune icrele pe ele.

Temperatura apei trebuie sa fie cuprinsa intre 23 si 26°C, PH-ul intre 6 si 7, iar duritatea intre 2 si 10dGH. Are nevoie de un sol bogat, de preferabil nisipos.

Plantarea

Pentru o perspectiva estetica reusita Cabomba aquatica trebuie plantata, in palcuri de mai multe fire, in partea din spate a acvariului sau pe lateralele acestuia. Faceti cu mana sau cu o unealta speciala o mica excavatie in substrat in care sa introduceti radacina si tasati solul in jurul plantei. Rizomul nu trebuie ingropat sub substrat.

Butasirea

In acvariu Cabomba aquatica se inmulteste prin butasire, adica prin taierea si replantarea varfurilor sau a ramurelelor laterale. Sectionati partea superioara a tulpinei cu o foarfeca si replantati-o, ingropand aproximativ o treime din ea (4-5cm) in substrat. Planta mama ramasa va dezvolta ramurele laterale care vor putea fi butasite ulterior.

De asemenea, uneori rizomul fragil al acestei plante se rupe si o noua planta poate rasari.

Anubias gracilis

Scientific classification

Kingdom: Plantae
(unranked): Angiosperms
(unranked): Monocots
Order: Alismatales
Family: Araceae
Genus: Anubias
Species: A. gracilis
Binomial name: Anubias gracilis
Chev. ex Hutch. & Dalz.

Anubias gracilis was first mentioned in 1920 by Chevalier and thereafter validly described by Hutchinson and Dalziel in 1936.[1]

Distribution

West Africa: Sierra Leone and Guinea.[1].

Description

Its long-stalked medium-green leaves are spade-shaped and may grow to 12 inches in length (30 cm).
Cultivation

This plant grows best when only partially submersed and when not crowded by other plants. It requires a lot of nutrients, a loose, iron-rich substrate, and moderate-to-strong light. It prefers a temperature range of 22-26 degrees C. It can be propagated by dividing the rhizome.

Illustration 1:
Anubias caladifolia?

Hygrophila angustifolia - Willow Hygro

Scientific classification

Kingdom: Plantae
(unranked): Angiosperms
(unranked): Eudicots
(unranked): Asterids
Order: Lamiales
Family: Acanthaceae
Genus: Hygrophila
Lindl.

Selected species

Hygrophila auriculata
Hygrophila corymbosa
Hygrophila difformis
Hygrophila polysperma
Hygrophila quadrivalvis

Hygrophila, commonly known as the temple plants or hygros, is a genus of flowering plants in the family Acanthaceae. There are about 125 species, of which about 40 are aquatic. The genus has a pan-tropical distribution, with some members entering sub-tropical areas. It is one of only two genera in its family that contains aquatic plants, the other being Justicia. The genus is treated inside the tribe Hygrophileae, which is noted as being in need of revision at the genus level, meaning the current taxonomic boundaries of Hygrophila are likely to change in the future.[1]

Description

The leaves are either homomorphic (i.e. all having one form) or heteromorphic (i.e. different leaves having different forms). When they are homomorphic, they are always simple and entire. When heteromorphic, the basal or submerged leaves are pinnately divided with either filiform (i.e. feather-like) or linear segments that can be either simple or forked, while the cauline leaves (i.e. those on the stem) or emergent leaves are entire.[1]

The flowers have petals ranging from white to purple in colour, having either 5 equal lobes or 2 lips. When an upper lip is present, it is erect and concave with either 2 lobes or 2 teeth, while the lower lip has 3 lobes. 4 stamens are present with 2 sometimes being staminodal (i.e. non pollen producing). They are not exerted and are fused to the petal tube above the middle. The individual filaments are united into pairs by a membrane at their bases, while the anthers have 2 locules. The anther sacs have no spurs or tails and are at the same level and parallel. A nectariferous disc is present but inconspicuous. Pollen grains are 3- or rarely 4-colporate, meaning the apertures are composed of both a colpus and a porus. Each flower produces 6 to many seeds.[1]

Ecology and uses

A number of species are cultivated for the aquarium trade, including H. difformis (water wisteria) and Hygrophila polysperma (Indian swampweed). Many members of the genus are troublesome weeds in irrigation and drainage ditches as well as rice fields. Several have become established outside of their native ranges, largely due to the aquarium trade, such as H. polysperma in the southern United States. [1]

In the aquarium

Hygrophila Angustifolia, also known as the Willow Hygro, is an undemanding, extremely attractive aquarium plant. It has large stems with narrow leaves that sway in the current like a weeping willow tree. Hygrophila angustifolia grows fast and helps keep aquarium water clean by removing nitrates, making it an ideal choice for the new aquarist.

It requires a nutrient-rich substrate, with iron-rich fertilizer added regularly. Provide a moderate amount of lighting of at least 2 to 3 watts per gallon of full spectrum (5000-7000K) light. CO2 fertilization is also recommended.

For Hygrophila Angustifolia to thrive, the water should be kept between 23°-28°C, with an alkalinity of 3 to 8 dKH and a pH of 6.5-7.5. To propagate, plant cuttings that have been removed from the healthy mature plant. Simply remove any leaves from the bottom 1" to 2" of the stem, and new root growth will form from the last node on the stem.

Approximate Purchase Size: Bunch 5" to 7"

Ceratopteris thalictroides - Watersprite

Scientific classification

Kingdom: Plantae
Division: Pteridophyta
Class: Pteridopsida
Order: Pteridales
Family: Ceratopteridaceae
Genus: Ceratopteris
Species: C. thalictroides

The species Ceratopteris thalictroides is a fern species belonging to the genus Ceratopteris, one of only two genera of the Ceratopteridaceae family. The species represents a special living form of ferns, and is thus of great botanical interest. The leaf and stem can also be used medically.

Watersprite (Ceratopteris thalictroides) is also known as Water Fern and Indian Fern. Its native habitat is still or slowly moving waters in tropical regions around the globe. Watersprite has been a popular aquarium plant since the early 20th century and is still one of the most commonly utilized aquarium plants due to its sturdiness, fast growth rate and ease of propagation. It will also bind a lot of organic waste and release plenty of oxygen into the water. Watersprite a versatile plant that can be planted in the substrate, anchored to aquarium decoration, or left floating on the surface.

Distribution

Pan-tropical. Widespread. There are three general types, known as the north type, the south type, and the third type.

Description

Plants usually rooted in mud, very variable in size and appearance, scales on rhizome peltate, thin , translucent, pale brown, (under a lens clear with dark cell walls) stipes 3 – 15 mm diameter in mature plants, spongy and air filled, sterile fronds pale green, thin, flaccid and spreading, 4 – 60 cm long, including a stipe c. half this length, fertile fronds pale green, to brown when over mature, firm, held erect, 15 – 100 cm or more long, including stipe to 40 cm long, proliferous or dormant buds with overlapping dark scales sometimes present in the axils of fertile pinnae (twice seen), sterile axes obviously winged, pinnae basically broad-ovate or deltoid with a few blunt lobes, sometimes more deeply incised, the segments 2 - 15 x 10 – 30 mm, fertile segments linear, 1 - 2 x 10 – 80 mm.[2]

Recent chromosome counts have shown that the north type and the third type both have chromosome counts of 2n=136, while the south type has a count of 2n=134, making it definitely a separate species.

Ecology

Swampy areas, swamp forests, sago (Metroxylon) swamps, marshes, natural and man-made ponds, mostly in stagnant water bodies or in still pockets along slow flowing rivers, full sun to moderate shade, from sea level to 1300 m, but mostly less than 500 m altitude. Sometimes massed on or around logs or other floating vegetation, once recorded in a fresh-water mangrove (Sonneratia) growing among the finger-like pneumatophores. In some areas Ceratopteris exhibits a degree of seasonality, reaching maturity and shedding spores during the dry season; plants have lost nearly all sterile fronds by this stage.[2] The species has been reported to functionally be an annual, repopulating from spore the next season, but it is clearly of indefinite lifespan in cultivation.

Culinary use

Fronds are cooked and eaten as a vegetable in Madagascar[3] and New Guinea[citation needed], and raw as a salad in Micronesia.[citation needed] However, the plant is believed to contain carcinogenic chemicals.[citation needed]

Other use

Ceratopteris thalictroides is widely used as an aquarium plant, and is prised for its versatility, being used both as a floating plant and a plant that can be rooted in the substrate.[4]

In the Sepik region of New Guinea fronds are used as a personal decoration.[citation needed]

Planting Watersprite

One of the reasons why Watersprite is so popular is that it will grow planted as well as unplanted. If you want to keep it planted, you can use a pot or plant it directly in the aquarium substrate. If you have digging fish, you can instead anchor Watersprite to rocks, driftwood or other types of aquarium decorations. Anchoring is however far from mandatory since Watersprite can float on the surface, thereby dimming the light and providing great cover for shy fishes.

Watersprite is a really sturdy plant that will adapt to most freshwater conditions. The preferred conditions are however soft and slightly acidic water. It grows best in soil with a pH reading of 5-9 and in very high amounts of light. It usually grows quickly. The water temperature should ideally be kept above 20 degrees C. Direct or indirect incandescent lighting (i.e. “normal” aquarium lighting) is enough for this plant, but is will appreciate fluorescent lighting. Natural light is also an option.

Since Watersprite is robust and grows fast, it can be kept even in aquariums where the fish like to nibble on plants. It is also resilient towards algae growth and snails. Its nemesis is instead potassium permanganate and this should therefore never be used to disinfect the aquarium.

It can provide useful shade to shyer fish and small fry. The dense roots are said to take nutrients out of the water helping to prevent the growth of algae.

Watersprite propagation

Watersprite propagates by forming “babies” on the outer leaf margins. These babies will then break of and develop their own roots. If the babies are unwilling to leave on their own, you can gently pull them from the parent plant when you begin to see tiny roots. If a leaf is torn from your Watersprite, you can leave it floating in the aquarium and wait for it to form new babies. Babies can be formed by both submerged and non-submerged Watersprite leaves. The parent plant normally dies within a year, but by then it will have formed numerous babies.

Elodea

Scientific classification

Kingdom: Plantae
(unranked): Angiosperms
(unranked): Monocots
Order: Alismatales
Family: Hydrocharitaceae
Genus: Elodea
Species
- E. callitrichoides
- E. canadensis
- E. nuttallii

Binomial name: Egeria densa PLANCHON
Synonyms
- Anacharis densa.

Classification & Species of Use To Aquarists:

What's in a name? Plenty. In the case of discussing the plants here, the common name "anacharis" used to be a valid genus name for some of these plants; and is a moniker still often used. The correct scientific name for most species of "anacharis" is Elodea. Egeria is another recent (1961) erected genus for a similar plant (the one of most interest to aquarists) that produces 2 to 4 flowers (Elodea only 1), that have large and deeply white petals (versus small and colorless), and are pollinated by insects (elodeas is done via water).

Elodea and Egeria are members of the aquarium-important frog's-bit family (Hydrocharitaceae). They're joined there by such notable plant genera as Blyxa, Hydrilla, Lagarosiphon, Limnobium, Ottelia, Vallisneria, et al..

Overview

Natural Distribution & Ecology: Argentina, Paraguay, Uruguay, Brazil. Good for cool to tropical aquariums.

Physical Description: The largest, most "dense" elodea. Leaves with rounded tips, in whorls of three or four, to over an inch in length.

Aquarium suitability : A very important aquarium plant, thrives quickly, using up suspended tank nutrients and hence cutting out a lot of algal growth. Excellent oxygenater, and very easy plant to grow. Will grow in almost any conditions but does better with high lighting conditions

Water conditions: Temperature: 50-77 ° F (10-25 ° C)
pH: 6.5 - 7.5
dCH: Prefers hard water

Lighting:
Light level: Moderate

Propagation: Cut stems will readily root in sand or gravel.

Bacopa monnieri

Scientific classification

Kingdom: Plantae
(unranked): Angiosperms
(unranked): Eudicots
(unranked): Asterids
Order: Lamiales
Family: Scrophulariaceae
Genus: Bacopa
Species: B. monnieri
Binomial name
Bacopa monnieri
L. Pennell[1]
Synonyms

Bacopa monniera
Indian Pennywort (L.) Pennell
Bramia monnieri (L.) Pennell
Gratiola monnieria L.
Herpestes monnieria (L.) Kunth
Herpestis fauriei H.Lev.
Herpestis monniera
Herpestris monnieria
Lysimachia monnieri L.
Moniera euneifolia

Bacopa monnieri (Coastal Waterhyssop, Brahmi, Thyme-leafed gratiola, Water hyssop) is a perennial, creeping herb whose habitat includes wetlands and muddy shores. Brahmi is also the name given to Centella asiatica, particularly in north India,[2][3] although that may be a case of mistaken identification that was introduced during the 16th century.[4]

Description

The leaves of this plant are succulent and relatively thick. Leaves are oblanceolate and are arranged oppositely on the stem. The flowers are small and white, with four or five petals. Its ability to grow in water makes it a popular aquarium plant. It can even grow in slightly brackish conditions. Propagation is often achieved through cuttings. This plant is just as happy submerged as it is on boggy conditions. They will flower on a regular basis but these will soon rot if underwater and it is very rare that seeds will be formed. It is used in many medicines especially for epilepsy and asthma, in Vietnam is is also used in their cuisine.

Ecology

It commonly grows in marshy areas throughout India, Nepal, Sri Lanka, China, Taiwan, and Vietnam, and is also found in Florida, Hawaii and other southern states of the USA where it can be grown in damp conditions by the pond or bog garden.

Medicine use

This plant has a number of uses in Ayurveda. It is a traditional treatment for epilepsy and asthma.[5] It has antioxidant properties, reducing oxidation of fats in the bloodstream.[5] However, anti-epilepsy properties seem to be in very high toxic and near lethal doses, so it's only used—at much lower non-toxic dosage—as an additive to regular epilepsy medication. Studies in humans show that an extract of the plant has antianxiety effects.[5][6]

It is listed as a nootropic, a drug that enhances cognitive ability. In India, this plant has also been used traditionally to consecrate newborn babies in the belief that it will open the gateway of intelligence. Laboratory studies on rats indicate that extracts of the plant improve memory capacity[7] and motor learning ability.[5] Recent studies suggest bacopa may improve intellectual activity.[8][9][10] The sulfhydryl and polyphenol components of Bacopa monniera extract have also been shown to impact the oxidative stress cascade by scavenging reactive oxygen species, inhibiting lipoxygenase activity and reducing divalent metals.[11] This mechanism of action may explain the effect of Bacopa monniera extract in reducing beta amyloid deposits in mice with Alzheimer's disease.[11] B. monnieri has a demonstrated ability to reverse diazepam-induced amnesia in the Morris water maze test. The mechanism of this action is unknown.[12] In some trials, bacopacide extract did not restore or enhance memory formation, but improved retention.[13][14] In others including a randomized clinical trial of 98 healthy older people (over 55 years)Bacopa significantly improved memory acquisition and retention.[15]

Its many active compounds include: alkaloids (brahmine and herpestine), saponins (d-mannitol and hersaponin, acid A, and monnierin), flavonoids (luteolin and apigenin). Also in significant amounts: betulic acid, stigmastarol, beta-sitosterol, bacopasaponins (bacosides A, bacosides B, bacopaside II, bacopaside I, bacopaside X, bacopasaponin C, bacopaside N2 and the minor components were bacopasaponin F, bacopasaponin E, bacopaside N1, bacopaside III, bacopaside IV, and bacopaside V). In rats, bacosides A enhance antioxidant defenses, increasing superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPX) activity. [16]

When a preparation of the plant was evaluated for safety and tolerability it showed no adverse effects but there were some reports of mild gastrointestinal symptoms.[17]

Cuisine

It is used in Vietnamese cuisine, where it is called rau đắng biển. It is used in cháo cá, a variety of rice congee made with fish and nấm tràm mushrooms.

Aquarium use

It is an easy plant to take care of. It is a fast growing plant with root growth at leaf junctions if your water chemistry is OK. I ended up giving up on this plant not becuase it did not grow, in fact, it grow so much that it was all over the place. Not a thing you want with a thin plant with small leaves. However, if you want a fast growing plant to decorate your tank's corner then this is the plant for you. Bacopa monnieri is a known hyperaccumulator of cadmium, chromium, lead and mercury, and as such can be used for phytoremediation.[18] [19]

Maximum size: 25 - 50 cm (9.84 - 19.69 in)
pH of water: 6.3 - 8.8
DH of water: dGH 8 - 30 °N
Recommended water temperature: 20 - 27 °C (68 - 80.6 °F)
Recommended substrate: Fine gravel
Light conditions: Bright
Place in aquarium: Background
Way of propagation: Lateral shoots
Plant origin: Everywhere
Growth: Slow

Propagation

Lateral shoots; remove the side shoots from the plant and remove the bottom leaves to reveal a bare stem at the bottom of the cutting. This is then simply placed into the substrate, take care not to crush the base of the stem, and it will soon root to form a new plant. When first planted ensure that there are plenty of nutrients to promote the root growth.

Microsorum pteropus. Java fern

Scientific classification

Kingdom: Plantae
Division: Pteridophyta
Class: Pteridopsida
Order: Polypodiales
Family: Polypodiaceae
Genus: Microsorum
Species: M. pteropus
Binomial name: Microsorum pteropus, Blume, 1933

Overview

Microsorum pteropus, commonly known as Java fern an aquatic fern from southeast Asia, is highly variable with several different geographic varieties that vary in leaf size and shape. It is found attached to roots and rocks in nature.

In the aquarium

Several cultivars of Java Fern exist. These include the "Narrow Leaf" Java fern, the "Needle Leaf" Java fern, the "Windelov" Java fern, the "Lance leaf" Java fern and the regular type, Cultivation in the aquarium is not problematic as long as the rhizome is tied to rock or driftwood and not planted directly into the substrate. It can be easily reproduced from small adventitious plants which are formed on the older leaves. These new plants should be attached to a rock or driftwood with a thin wire, rubber band or fishing line until new anchor roots have been formed. once new rhizomes have formed these can be taken off and planted onto more rocks or driftwood It can also be done with cotton thread,as this dissolves in water after about two months. This plant does particularly well with fish that are normally detrimental to plants, on account of its relatively bitter taste.

Temperature: 18 - 30 C
PH: 5.0 - 8.0
Lighting: Very Low
Growth Rate: Slow
Difficulty: Very Easy

Height 20-35cm, Width, 5-15cm, Light low-high, Temperature 18-30ºC, pH tolerance 6-8, kH 2-15. Can also withstand slightly brackish conditions. Java Fern actually requires low light; in higher intensity light it gets "burned" and develops transparent patches.

The Java Fern has very distinguished characteristics from most other aquatic plants. More than just beautiful, this plant is quite undemanding and easy to cultivate, even doing well in poorly lit tanks and without extra nutrients or CO2. It's also an ideal plant to use in setups that contain burrowing or vegetarian fishes, since in general they will not disturb it. This plant should not be buried in the gravel, but rather fixed to rocks and driftwood, leaving its roots loose in the water. The roots eventually attach themselves to the rock or wood.

I use it in a 40 liter aquarium that I set up just so I could keep a dinky pair of incandescent bulbs on it and have plants. It's housed only with dwarf anubias, and java fern is a nice, taller, companion. Its roots attach well to a rock wall I made of lava rock, and looks great peeking out of all the crevices. It's nice to use when you have fish that prefer subdued light but like a planted tank. I will use it in an apistogramma tank. I only use a liquid fertilizer after water changes, and so far it has done well. Because of the incandescent bulbs, even though it produces new shoots like mad it hasn't attained the height that, in my opinion, makes it less attractive.

Microsorum pteropus, known far and wide as 'Java Fern', can be found growing in a myriad of environments on its native continent of Asia. This universal aquarium plant is available for sale in most every establishment that sells aquatic plants, though the cultivars M. pteropus 'Tropica' and M. pteropus 'Windelov' (so named for the aquatic plant nursery Tropica and its owner) are less frequently encountered.

M. pteropus is one of the easiest aquatic plants to cultivate, and as such, it is an indispensable starting point for the aquatic plant novice. This ease of maintenance combined with its ability to root on rocks and other surfaces that are typically unavailable for planting have assured this species' longevity in the hobby. Medium light is sufficient for optimal growth, though higher and lower values are tolerated well. Like plants from the genus Anubias, M. pteropus features a rhizome from which both leaves and roots develop. This can be anchored to a rock or a piece of driftwood using threads or other materials; after a few months the roots will take hold and the binding media can be removed. If the aquarist desires to plant this plant in the substrate, he or she should take care to bury only the roots and not the rhizome. Though exceptional fertilization and CO2 supplementation are not necessary, good circulation is essential for good growth. Emersed cultivation within a paludarium or terrarium is easy, as long as the planting surface or substrate is kept fairly moist.

Propagation

When well adapted, it reproduces easily, and the reproduction is quite interesting: the daughter plants are born on the edge of the leaves of the mother plant and grow right there, clinging on it with their little roots. With time the daughters grow until they release themselves from the mother, and float around until they get entangled on something. The hairy roots adhere easily.

The propagation of M. pteropus is merely a matter of either dividing the creeping rhizome with a knife and reattaching or replanting the severed piece, or removing the adventitious plants that periodically form on the leaves and securing them.

With its distinctive ability to grow on otherwise unplantable surfaces, the possible applications of M. pteropus in the aquascape are virtually unlimited. A favorite place for this species is growing on a piece of wood in the middle or rear area of the aquarium. Another popular practice is the planting of a corkwood background with this species, where it proves an excellent backdrop for other species growing in the substrate.

Cladophora aegagropila, Japanese Moss Balls

Scientific classification

Kingdom: Plantae
Division: Chlorophyta
Class: Ulvophyceae
Order: Cladophorales
Family: Cladophoraceae
Genus: Aegagropila
Binomial name: Aegagropila aegagropila, Kützing

Moss Ball, Lake Ball, Cladophora Ball. This plant has become very popular over recent years in the aquarium hobby but sadly many of the local areas that had colonies of these are disappearing. They are actually a form of green algae and the inside of the ball is mainly soil or mud.

Information about care

Maximum size: 2 - 10 cm (0.79 - 3.94 in)
pH of water: 6.2 - 8
DH of water: dGH 12 - 30 °N
Recommended water temperature: 15 - 27 °C (59 - 80.6 °F)
Recommended substrate: Rocky
Light conditions: Medium
Place in aquarium: Middle
Way of propagation: Divisions
Plant origin: Europe
Growth: Slow

Origin

Europe, these are commonly found in Iceland and Estonia but they are now being grown in Japan for the aquarium hobby.

Planting Area

These plants are non-rooted mosses that are simply placed on the substrate .

Lighting Requirements

Medium lighting, if lower levels are used the plants will fade and lose some of their rich green colouration

Propagation

To produce fresh plants from the mother plant, simply divide the ball into smaller pieces. These will look irregular to start with but over a period of time they will develop into a spherical shape again, you have to be patient with these plants as they are slow growers.

Difficulty

Medium

Diverse

Primul acvariu

Majoritatea acvaristilor isi incep “cariera” prin actizitionarea unui acvariu din targ, cumpara cativa pesti ... si apoi incep problemele :-). Cum cel mai simplu este sa inveti din greselile altora, am sa incerc sa scriu cateva lucruri despre primul acvariu. Un acvariu este un colt de natura la noi in casa. Pe cat posibil trebuie sa le asiguram pestilor si plantelor aceleasi conditii ca in natura. Sunt pesti care au nevoie de o temperatura mai ridicata, altii trebuie tinuti la o temperatura mai joasa. Unii tolereaza in jurul lor alte specii, iar altii sunt foarte teritoriali.

De asemenea, dimensiunile acvariului trebuie alese in functie de pestii pe care dorim sa ii crestem. Cel mai simplu este sa apelati la un amic care sa va ajute in achizitionarea unui acvariu. Sau daca nu aveti un prieten priceput, puteti gasi acvaristi amabili la http://www.acvariu.ro/forum :-). Daca aveti rabdare sa cititi cateva articole inainte de a cumpara acvariul si pestii, ar fi excelent !

Un acvarist informat va avea rezultate excelente intr-un timp foarte scurt. Nimic nu este mai placut decat sa vezi un acvariu frumos, cu plante vii si pesti sanatosi. Daca sariti peste pasii de inceput (si multi fac asta) veti avea parte de pierderi, plantele nu vor creste, apa se va umple de alge, iar dvs de nervi. Deci, mai intai va decideti ce pesti doriti. Daca doriti mai multe specii, trebuie sa verificati daca se “potrivesc” dpdv hrana, temperatura, pH etc. In functie de aceasta alegeti dimensiunile acvariului, precum si plantele.

Bazinul

Personal, va sugerez pentru inceput un acvariu de 45-50 de litri. Nu veti investi foarte multi bani, iar ulterior acesta se va dovedi foarte util. Acesta este un acvariu excelent pentru inceput, dupa cateva luni de acvaristica veti acumula suficiente informatii pentru a va dori un acvariu mare, de peste 150 de litri. E perfect adevarat ca un bazin mai mare se intretine mai usor, insa la inceput este bine sa invatam “rutina”: schimbatul apei, observarea cu atentie a pestilor si plantelor etc. In acest acvariu veti putea creste 5-10 pestisori. Dar nu va grabiti, inca nu este momentul sa ii si cumparati !! Dupa ce vom avea un acvariu mai mare, vom pastra bazinul de 50 litri pe post de carantina, dupa cum veti citi lai sectiunea "Pesti".

Echipamente

In principiu aveti nevoie de urmatoarele: incalzitor cu termostat, pompa de aer (+ piatra de aer , furtun), filtru (daca poate si aera, pompa de aer poate lipsi); filtrarea se poate face si mecanic, prin bureti actionati de jetul de aer. Daca va cumparati un acvariu vara, cumparati incalzitorul mai tarziu. Mai aveti nevoie de un furtun cu ajutorul caruia veti schimba apa, nu alegeti unul foarte gros. Un furtun subtire va este util mai ales pentru culegerea resturilor de pe fundul acvariului. Mai aveti nevoie si de o galeata, in aceasta veti lasa apa la "invechit". O sa explic si ce este cu apa asta. De asemenea, un minciog este absolut necesar pentru a putea muta pestii dintr-un loc in altul. Un termometru va indica permament temperatura in acvariu. Un neon va asigura iluminatul in acvariului, garantand si cresterea plantelor.

Decor

NU folositi elemente de decor improprii oricat de atractive v-ar parea. NU folositi pietris colorat. Arata urat si contrazice un principiu de baza: acvariul trebuie sa arate pe cat posibil, ca mediul natural al pestilor. Eu ersonal nu folosesc decor. Dupa ce capatati suficienta experienta veti decide singuri daca aveti sau nu nevoie de decor pentru acvariu. Asta depinde si de pozitionarea lui in camera.

Substrat

Se recomanda folosirea substratului de pietris+nisip (bacterii folositoare se formeaza in substrat). Va sugerez un nisip cu granulatia mai mare, nu unul foarte fin (sufoca radacinile plantelor). Pietrisul trebuie sa fie din roci dure, nu calcaroase.

Rocile calcaroase modifica in timp apa, ceea ce poate fi fatal pestilor. In principiu, substratul ar trebui sa aiba grosimea de 3-5 cm. Acesta trebuie pus mai subtire in partea din fata a acvariului si mai gros in cea din spate, din motive estetice: se creaza un fel de panta, puteti vedea astfel tot acvariul, nu numai partea din fata.

Plante

Plantele sunt folositoare (consuma din substantele organic descompuse in bazin, oxigenare, frumusete etc). Recomandam folosirea unor specii mai rezistente si/sau mai ieftine. Elodeea, Valisneria, Bacopa, unii echinodorusi sunt destul de rezistene. La fel si anubias. Vizitati sectiunea plante a sitului www.acvariu.ro pentru a citi detalii despre toate aceste plante. Plantele ce cresc mari le veti pune mai in spate, cele mai mici vor ocupa partea din fata a acvariului dvs. Pestii mai mari vor astfel obligati sa inoate in partea din fata a acvariului, spre bucuria dvs. Cei mici isi vor gasi refugiul intre plantele mari din partea din spate a acvariului. Pe cat posibil incercati sa mascati filtrul, buretii, incalzitorul in spatele plantelor mari.

Pesti

Sunt considerati pesti ai incepatorilor viviparii (nasc pui vii), care va vor da ocazia inmultirii pestilor fara eforturi deosebite. Ca principiu, un vivipar la 4 litri de apa este un minim recomandat, nu suprapopulati acvariul!. Sunt foarte frecvente asocierile nepotrivite de pesti facute de incepatori (guppy si xipho alaturi de carasi aurii, betta, zebre si nigro). Va trebui sa va stapaniti. Sau pseudotropheus auratus (cichlid african) alaturi de xipho / guppy etc. Trebuie sa rezistati tentatiei de a strange in bazin o multime de pesti de diferite feluri. Cel mai simplu este sa cumparati o pereche de xipho, una de moly si cativa guppy. Pentru inceput nu va complicati viata cu pesti pretentiosi si foarte scumpi ! Cereti sfatul cuiva priceput, pe forum veti gasi prieteni dispusi sa va ajute.

Un alt aspect care trebuie avut in vedere este (pentru armonizarea bazinului) cel al functiunilor unor pesti. Spre exemplu, intr-un bazin pasnic cu leeri ati putea tine niste kuhli sau corydorasi pentru a consuma mancarea de la fundul apei, sau un ancistrus sau alt mancator de alge pentru combaterea acestora.

Procurarea pestilor: pe cat posibil, luati pesti si plante de la prieteni. Veti avea garantia ca acestia nu sunt bolnavi. Cu un peste cumparat din targ sau din magazin riscati sa va umpleti acvariul cu diverse boli, unele f.dificil de tratat. Daca totusi vreodata cumparati pesti din surse nesigure, acestia trebuie tinuti separat o luna de zile inainte de a fi introdusi in acvariu (carantina). In aceasta luna aveti ocazia sa ii observati foarte atent, iar daca vedeti ca au probleme, nu au pofta de mancare, inoata haotic, etc, nu ii introduceti in acvariul dvs. Nu cumparati niciodata pesti din acvariile in care vedeti pesti morti, sau bolnavi. Nu riscati!!

Hrana

Pestii trebuie hraniti in functie de necesitatile lor, pe cat posibil cat mai variat. Recomandam hrana industriala administrata alternativ cu hrana vie (larve libelule) si hrana congelata (tubii / libelule / artemii). Este foarte important sa nu abuzati cu hrana. Resturile neconsumate ajung pe fundul acvariului, unde se descompun, apa isi pierde claritatea, iar dpdv chimic isi schimba proprietatile. Riscati sa pierdeti o parte din pesti !! Va sugerez sa le dati hrana putina, cat apucati intre doua degete. Dupa ce o termina, le mai dati inca o data. Si tot asa. Imediat cum pestii isi pierd interesul pentru hrana, incetati hranirea. Un peste hranit in exces devine gras si isi reduce durata de viata. De principiu, este suficient sa hraniti pestii de 2-3 ori pe zi.

Teste apa

Apa si caracteristicile acesteia ar trebui monitorizate. Exista in comert mai multe produse de testat acesti parametri.

Apa din acvariu trebuie sa fie clara, sa nu aibe nuante verzui. Schimbarea a 10-15% din apa trebuie sa devina o rutina pentru dvs. Cum probabil ca veti folosi apa de la robinet, va sugerez sa procedati astfel: umpleti o galeata de plastic cu apa de la robinet (apa rece, nu calda). O tineti minim 2-3 zile, abia apoi puteti sa o introduceti in acvariul cu pesti. Aceasta pentru ca in apa de la robinet exista clor + alte substante ce nu fac bine pestilor. Daca puteti pune in galeata o piatra de aer + un incalzitor, veti accelera ritmul in care clorul este eliminat.

Ok, deci ati decis ce pesti doriti pentru inceput, sa presupunem ca ati ales vivipari. Cumparati un acvariu de 40-50 de litri. Spalati-l foarte bine cu apa rece, nu folositi sapun/detergenti. Introducem substratul (pietrisul+nisipul). Introducem filtrul si termometrul. Daca e iarna, introducem si termostatul. Umplem acvariul cu apa, dar nu pana la preaplin, mai lasati 3-4 cm. Dupa 15 minute pornim filtrul si incalzitorul cu termostat (viviparii pot fi crescuti la temperaturi intre 22-25 de grade). Dupa 2 zile putem introduce plantele in acvariu, ulterior si pestii. Trebuie sa rezistati tentatiei de a lua multi pesti de la inceput :-). Va sugerez ca sa stingeti iluminatul acvariului noaptea.

Intretinerea bazinului

Se va face saptamanal sau macar odata la 2 saptamani. Apa NU trebuie schimbata in intregime, ci in jurul a 10 - 30%, in functie de marimea bazinului si intervalul de timp (bazin mai mare - procent mai mic). Apa va fi scoasa de preferinta cu un furtun, aspirand deseurile de la fundul bazinului. De principiu e de preferat sa schimbati apa mai des si mai putin decat mult si rar, pentru ca un schimb masiv de apa produce schimbari bruste in chimia apei (aciditate, duritate, etc), ceea ce poate cauza pierderea unor pesti mai sensibili.

In timp, unele frunze mor si este bine sa le eliminati din acvariu. Curatati saptamanal buretii din interiorul acvariului, daca aveti 2, curatati cate unul saptamanal. Nu spalati buretele decat cu apa rece, fara sapun sau alte chimicale. In acesti bureti exista bacterii foarte utile care fac sa mentina echilibrul biologic al apei.

Ce ar mai fi de spus, ca o recapitulare

1. nu hraniti pestii in exces

2. nu supra-populati acvariul

3. nu uitati sa schimbati apa saptamanal: 10-15%

4. nu folositi NICIODATA la intretinerea acvariului substante chimice. De exemplu, nu folositi detergenti pentru a curata geamurile acvariului.

5. acvariul nu trebuie sa stea in bataia directa a soarelui. Riscati o explozie a algelor.

6. curatati sapamanal geamurile acvariului.

7. nu cumparati pesti din surse nesigure.

Sfaturi pe scurt

Achizitiile de pesti

- Nu cumparati pesti bolnavi in speranta ca ii veti vindeca.
- Nu cumparati niciodata un peste aparent sanatos dintr-un bazin cu pesti morti.
- In calitate de incepator, este bine sa nu cumparati specii rare.
- Nu cumparati pesti tineri fara a lua in considerare dimensiunile lor cand ajung la varsta adulta.
- Nu puneti pestii proaspat achizitionati direct in bazinul dumneavoastra!
- Pestii se pot adapta la schimbari ale pH-ului de ordinul a cinci zecimi. Un salt de doua puncte insa, ar putea fi fatal. De multe ori se intampla ca pesti perfect sanatosi la cumparare sa moara cand sunt mutati in bazine cu o mare diferenta de pH.
- De aceea se procedeaza in felul urmator: mai intai se lasa sa pluteasca in bazin punga cu pesti 10-15 minute (pentru egalizarea temperaturilor); apoi se amesteca treptat apa de transport cu cea din acvariul de destinatie, dupa care sunt introdusi definitiv in acvariu.

Bazinul

- Nu trebuie amplasat pe pervazul unei ferestre, deoarece excesul de lumina va avea efecte negative, descrise in amanunt la capitolul "Iluminatul".

Decorul si substratul

- Nu puneti melci si scoici ca decor (durizeaza apa).
- Nu folositi nisip calcaros decat pentru acvariile cu pesti care necesita un astfel de nisip (cichlide africane). Cum testati nisipul vedeti in sectiunea "Substratul".
- Nu folositi pietris colorat artificial - creeaza un aspect artificial si poate fi si nociv.

Incalzitorul

- Nu-l porniti decat daca este scufundat in apa (atentie! unele modele nu functioneaza complet scufundate), deoarece se incalzeste foarte repede daca este scos din apa. In acest caz va puteti arde degetele, iar daca il scapati, poate exploda!

Apa

- Nu schimbati brusc calitatile apei.
- Niciodata nu se schimba toata apa din acvariu.
- Nu se va inlocui niciodata mai mult de 1/2 din volumul acvariului. Daca nu se procedeaza astfel, se poate ajunge pana la moartea pestilor si a plantelor. Se recomanda schimbarea a 25% din apa.
- Daca folositi apa de ploaie ca sursa de apa, asigurati-va ca locul de colectare este curat.

Lumina

- Nu porniti sau stingeti lumina brusc, fiindca streseaza pestii (de exemplu, discusii care depun sunt foarte speriosi). Aprinderea luminii se face daca se poate gradual (intai lumina trebuie sa patrunda in camera, apoi se aprinde la pesti).
- Nu folositi accesorii nerezistente la apa.

Hranire

- Nu spraalimentati pestii.
- Nu va fixati pe un singur tip de dieta (majoritatea incepatorilor isi chinuie pestii hranindu-i doar cu purici de balta uscati).
- Nu neglijati speciile nocturne.
- Nu uitati sa spalati viermii tubifex inainte de hranire.

Inmultire

- Asigurati-va ca perechea nu are defecte fizice.
- Temperatura si decorul trebuie sa se potriveasca cu cerintele speciei.
- Nu deranjati pestii cand depun (eventual acoperiti geamul frontal).
- Protejati ouale/puii de parintii flamanzi si alte specii predatoare.
- Nu inmultiti pestii la intamplare; pastrati culorile pure.
- Verificati filtrul regulat: icrele fertilizate pot fi atrase in cutia acestuia si pot chiar ecloza acolo.

Plante

- Nu achizitionati plante pentru un bazin cu pesti al caror biotop natural nu contine plante: le vor devora / dezradacina (chiar daca numai in periodele de reproducere).
- Nu cumparati plante daca sunt: pline de alge (cu urme de alge), palide, in putrefactie si nici daca nu cunoasteti necesitatile acestora. Unele plante au nevoie de temperaturi mai inalte, altele de apa rece - rezultand evident ca nu vor supravietui impreuna in acelasi bazin.
- Nu uitati sa adaugati substante nutritive pentru plante.

Sanatate

- Nu cumparati decat pesti compatibili si sanatosi.
- Nu introduceti imediat noile achizitii: tineti-le in carantina mai intai.
- Nu tratati pestii brutal: transportul si manipularea trebuie sa se faca cu cea mai mare atentie.
- Nu supraalimentati pestii. Resturile (mai ales daca se foloseste hrana de casa) pot provoca boli. De aceea trebuie indepartate dupa ce pestii nu se mai hranesc.
- Nu lasati pestii bolnavi la un loc cu cei sanatosi; trebuie mutati imediat intr-un acvariu-spital.
- Nu folositi plasele cu care ati mutat pesti bolnavi inainte de a le dezinfecta.
- Nu lasati metale in apa.

Ciclul Azotului

Azot, amoniac, nitriti, nitrati

Azotul (N) este un element esenţial al ţesuturilor animale şi vegetale. Moleculele azotate, provenind de la animale (excrementele peştilor), vegetale sau mâncarea în surplus, sunt transformate în amoniac (NH3 sau NH4+), care este foarte toxic pentru peşti. Acest fenomen se întâmplă şi în natură însă volumul de apă este foarte mare faţă de numărul de peşti astfel încât concentraţia de amoniac este foarte mică. În acvarii volumul de apă este mic şi concentraţia de amoniac poate deveni periculoasă în anumite condiţii.

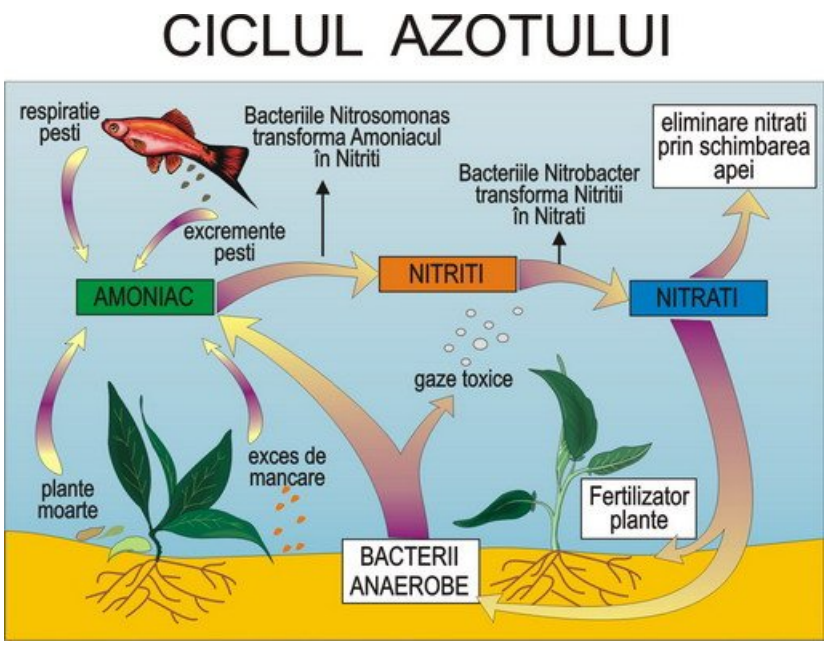
Transformarea amoniacului in nitriti si din nitriti in nitrati poarta numele de Ciclul Azotului...

NOTĂ: pentru a păstra denumirile pe care le veţi găsi în toate documentele în engleză am preferat în documentul de faţă să folosesc denumirea de nitriţi/nitraţi în loc de azotiţi/azotaţi, în română ambele denumiri fiind corecte şi utilizate.

În prezenţa oxigenului din apă amoniacul este transformat de către bacterii (nitrosomonas) în nitriţi* (NO2-). Aceştia sunt toxici la valori mai mari de 0,3 mg/l.

Nitriţii, în prezenţa oxigenului sunt transformaţi la rândul lor de alte bacterii (nitrobacter) în Nitraţi (NO3-). Nitraţii sunt mai puţin toxici pentru vieţuitoarele din mediul acvatic iar pentru plante constituie chiar un nutrient strict necesar. Nitraţii sunt veriga finala a acestor transformări ale azotului, ei acumulandu-se în timp. Concentraţia maximă de nitraţi este de 100 mg/l (recomandabil sa nu se depăşească valoarea de 50 mg/l). Acest lanţ de transformări poartă numele de “Ciclul azotului”.

Ciclul Azotului

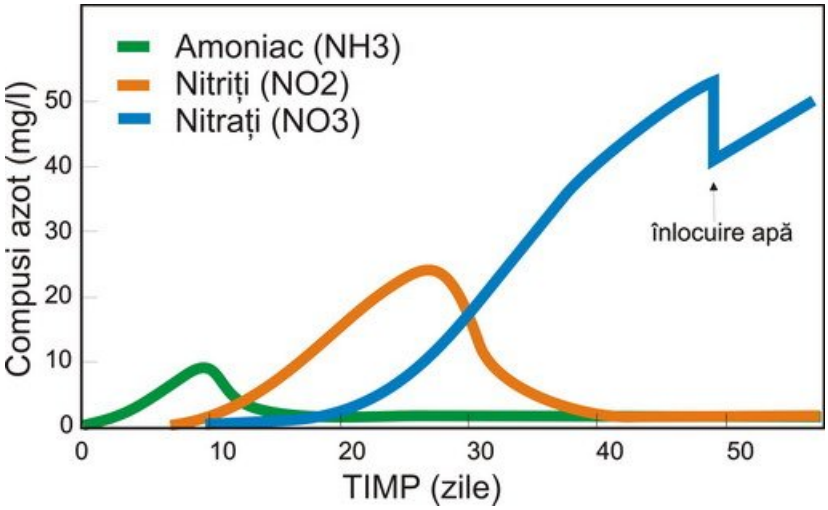


Toate elementele care participă la acest ciclu (oxigen, bacterii, pH, temperatură, plante, materii organice primare din care provine amoniacul, etc.) trebuie păstrate într-un echilibru.

La începutul procesului, într-un tanc nou, numărul de bacterii este mic. Înmulţirea acestora se face lent, pe măsură ce cantitatea de amoniac şi respectiv nitriţi din apă creşte. La început se dezvoltă bacteriile care descompun amoniacul în nitriţi şi după ce concentraţia de nitriţi depăşeşte o anumită valoare încep să se înmulţească bacteriile care transformă nitriţii în nitraţi.

După o perioadă de timp, coloniile de bacterii devin suficient de dezvoltate pentru a transforma tot amoniacul în nitriţi şi nitriţii în nitraţi.

Pe parcursul acestui proces, deoarece numărul de bacterii este mic, concentraţiile de amoniac şi nitriţi depăşesc de multe ori valorile maxime ceea ce duce la multe dezastre.



"Sindromul acvariului nou" s-ar traduce prin faptul că începătorii populează acvariul imediat ce l-au umplut cu apă. Din cauza nivelurilor mari de amoniac şi nitriţi de la începutul ciclului azotului apar dezastre (mor peşti). Prima tentaţie a începătorului este să schimbe imediat o mare cantitate de apa (de cele mai multe ori toată apa), să spele foarte des filtrele şi/sau să introducă medicamente în acvariu... Toate acestea duc la distrugerea coloniilor de bacterii care deabia începuseră să se formeze şi... totul se reia de la capăt...

Pentru a evita astfel de dezastre vă recomandăm ca la pornirea unui acvariu nou să respectaţi câteva reguli:

- în prima săptămână nu se vor introduce peşti în acvariu. În această perioadă se va introduce în acvariu mâncare pentru peşti ca pentru 1-2 peşti.
- După prima săptămână se vor introduce primii peşti (2-4 în funcţie de mărimea acvariului). Aceştia trebuie să fie neapărat din specii foarte rezistente nepretenţioşi şi recomandabil mai ieftini! De obicei aceştia sunt din familia "sanitarilor".
- După încă 3 săptămâni putem considera că acvariul este colonizat destul de puternic cu bacterii pentru a-l putea popula complet cu peşti.

Recomand totuşi efectuarea periodică a unor teste pentru determinarea exactă a valorilor de amoniac, nitriţi şi nitraţi pentru a ţine sub control ciclul azotului şi respectiv starea acvariului.

Cel mai greu lucru pentru un pasionat al acvaristicii este să stea şi să aştepte 30 de zile lângă un acvariu fără peşti... Ţineţi minte că acest efort merită şi că astfel veţi scuti alte săptămâni de muncă pentru reechilibrarea acvariului sau pierderea unor exemplare de peşti valoroase sau la care ţineţi.

Controlul Ciclului Azotului

În general putem considera că în acest sistem unul din parametrii care este foarte uşor de controlat este amoniacul respectiv sursele primare din care apare amoniacul. Păstrarea unui număr optim de peşti pe volumul de apă din acvariu şi evitarea supraalimentării acestora sunt căile cele mai la îndemâna noastră pentru a păstra echilibrul.

De asemenea într-un acvariu bine plantat este mai uşor de păstrat acest echilibru, plantele fiind consumatoare de nitraţi.

Oxigenarea apei este un alt factor care favorizează activitatea bacteriilor. Prin schimbările regulate de apă se elimină din acvariu surplusul de alimente, resturile vegetale şi alte materii organice şi în principal surplusul de nitraţi (propriu zis scădem concentraţia acestora).

Bacteriile care realizează transformările din ciclul azotului se găsesc peste tot în mediul nostru (apă, aer...). Tot ce ne rămâne de făcut este să le creăm un mediu propice de dezvoltare. Ele se dezvoltă, în general, pe suprafaţa oricărui obiect dintr-un acvariu (geamuri, pietre, filtre, etc.) şi foarte puţin în apă. Pentru a-şi îndeplini rolul trebuie să dipună de o suprafaţă foarte mare şi să intre în contact cu o cantitate mare de apă oxigenată. Din aceste cauze cel mai bun mediu de dezvoltare a coloniilor de bacterii sunt filtrele (în acestea o circulaţie lentă a apei favorizează procesul).

Un alt factor foarte important în stăpânirea Ciclului Azotului este înlocuirea periodică a unei cantităţi de apa. Prin această acţiune se îndepărtează nitraţii în exces şi se introduc în acvariu, odată cu apa proaspătă, micronutrienţi necesari creşterii plantelor.

Timpul de ciclare a unui acvariu nou poate fi micşorat prin mai multe metode:

- Folosirea în prima perioadă (fără peşti în acvariu) de substanţe chimice conţinând amoniu care să forţeze colonizarea cu bacterii (vezi şi articolul Ciclarea fără peşti).
- Introducerea de produse speciale care conţin bacterii (la noi cel mai cunoscut produs este Cycle dar mai sunt şi altele). Nu cunosc realizări notabile la folosirea acestor produse...
- Introducerea în noul acvariu de mediu colonizat (nisip, filtre, etc.) din acvarii ciclate. Această metodă este nerecomandată din punctul meu de vedere deoarece odată cu acestea se pot introduce în noul acvariu paraziţi şi/sau bacterii nedorite, alge, etc. De asemenea fără o cantitate minimă necesară de amoniac respectiv nitriţi aceste colonii de bacterii se vor micşora până la nivelul de echilibru...
- Utilizarea plantelor naturale. Sunt unele specii, cum ar fi Ceratopteris şi Hygrophila, care sunt foarte utile mai ales la pornirea unui acvariu nou deoarece aceste sunt foarte rezistente şi consumă mulţi nitraţi.

După cum s-a arătat, un rol foarte important este mediul de dezvoltare al bacteriilor. Cel mai ieftin (şi în acelaşi timp şi foarte eficace) este filtrul din burete racordat la un vibrator de aer. Acesta este impropriu spus "filtru" deoarece rolul lui este de mediu de dezvoltare pentru bacterii (acestui filtru i se mai poate spune "filtru biologic") şi nu de filtrare mecanică a apei - prin filtrare majoritatea oamenilor inteleg filtrarea mecanică adică reţinerea impurităţilor. Trebuie să ţineţi cont că prin spălarea lui micşoraţi numărul de bacterii sau chiar le distrugeţi pe toate (spălarea este totuşi necesară deoarece prin depunerea impurităţilor buretele se infundă şi circulaţia apei este împiedicată). Din această cauză recomand utilizarea a două filtre şi spălarea pe rând a acestora şi numai când este necesar. Pentru o corectă curăţare a buretelui recomand o primă spălare într-o soluţie de 30% oţet alimentar după care o îndelungată spălare în apă curgătoare. Atenţie: oţetul distruge în totalitate bacteriile şi se foloseşte când aveţi doi bureţi. În cazul în care aveţi numai un burete spălarea trebuie să fie rapidă şi numai în apă, recomandabil în apă fără clor care distruge bacteriile.

Alte filtre conţin zone "biologice" necesare dezvoltării coloniilor de bacterii. Acestea sunt formate din bucăţi de burete, nisip, inele de ceramică, etc.

Într-un acvariu complet ciclat şi aflat în echilibru distrugerea coloniilor de bacterii prin spalarea filtrelor nu va duce totuşi la creşterea foarte mare a valorilor de amoniac şi nitriţi deoarece bacteriile se găsesc, după cum am mai spus, pe toate suprafeţele obiectelor din acvariu. Acestea vor ajuta ca în filtrele spălate să se refacă rapid coloniile de bacterii.

ATENŢIE:

Coloniile de bacterii care ajută la ciclul azotului sunt distruse de cele mai multe medicamente şi substanţe chimice folosite în tratamentele din acvaristică. Acesta este un alt motiv (foarte puţin prezentat sau chiar omis în literatura de specialitate) de a folosi acvarii de carantină în care să se facă tratamentele. Ţineţi minte acest lucru de fiecare dată când faceţi un tratament direct în acvariu. Poate apare "sindromul acvariului nou" chiar şi la acvarii stabile de mult timp, cu atât mai mult cu cât peştii sunt slăbiţi de boală şi tratamentul în sine... După un astfel de tratament utilizaţi toate metodele de care dispuneţi de a micşora cantitatea de amoniac/nitriţi: schimbări zilnice de apă timp de 1-2 săptămâni, aerare puternică, grăbirea colonizării cu bacterii (bureţi din alte bazine ciclate – cu toate riscurile aferente), etc.

O altă greşeală pe care am observat-o la mulţi acvarişti începători este de a utiliza îngrăşăminte pentru plante terestre în acvariu. Aceste îngrăşăminte au ca şi componenţi de bază tripleta N-P-K (Nitraţi, Fosfaţi, Potasiu). Pe majoritatea ambalajelor acestor produse este scris o serie de 3 numere (de exemplu: 2-2-50 sau 10-20-40) care reprezintă concentraţia acestor substanţe din produs. La cele expuse mai sus în cadrul articolului, din care realizaţi ce reprezintă introducerea de nitraţi în exces, se mai adaugă şi faptul că fosfaţii sunt şi ei letali în concentraţii foarte mici. Tabloul cred că este complet şi nu necesită comentarii...

Soluţiile fertilizatoare pentru acvaristică nu conţin fracţiile N-P (sau cantitaţile sunt foarte mici).

Un alt semnal de alarmă îl ridic asupra apei utilizate. Multe dintre acestea conţin nitraţi (şi fosfaţi) în cantităţi mai mai mici sau mai mari în funcţie de sursa apei utilizate. Chiar şi apa potabilă are un conţinut mic de nitraţi (acceptat în normativele în vigoare referitoare la calitatea apei potabile), în apele din fântâni şi apele curgătoare acest conţinut este mult mai mare (ţineţi cont că în agricultură se utilizează cantităţi enorme de îngrăşăminte N-P-K!!!).

Amoniacul

Concentraţia de amoniac maximă admisă în apa din acvarii depinde de pH şi temperatura apei (şi de timpul cât este menţinută această concentraţie). În tabelul de mai jos sunt prezentate valorile maxime admise în mg/l (menţinerea peştilor la aceste valori devine letală în câteva ore):

PH	20 ºC	25 ºC
6,5	15,4	11,1
7	5	3,6
7,5	1,6	1,2
8	0,5	0,4
8,5	0,2	0,1

Se observă că în ape cu pH-ul şi temperatura mică concentraţia maxim admisă de amoniac este mult mai mare decât pentru ape cu pH-ul şi temperatura mare.