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# The Angelfish Society



# FinTASTic

Newsletter

Aug 2009

Issue 23

## Pterophyllum altum biotopes

By Edgar Ruiz

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Three factors, once integrated into a single aquarium, should bring many a mystery out of spawning *P. altum*:

1. Simulation of their true biotope.
2. Simulation of their natural diet and predatory feeding habits.
3. Simulation of water chemistry, physics and dynamics.

This article discusses the biotopes where *P. altum* is found in the wild.

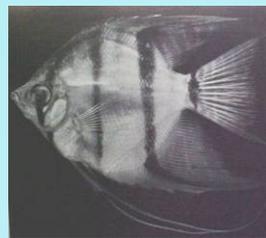
**"Pozo Azul"**  
upstream



At Pozo Cristal, maybe 2 or 3 miles away, *I saw my second (actually two distinct pairs) pair of fish, also caring for their clutches.* Pozo Cristal is a mixed habitat resembling more a Caño Llanero than an Alto Orinoco Habitat. It runs over flatter ground than the

nearby Pozo Azul. Horste Linke recollected fish only a few kilometers to the North in Laguna Paragueña

**Enjoy Ed's Full Article on Page 2**



Preserved specimen of *Pterophyllum scalare* from Dr. Kullander study.



*Pterophyllum scalare* showing typical profile



*Pterophyllum scalare* that shows more of a brownish hue. These are commonly sold as Peruvian altums, in error

## Wild Angelfish Species

By Steve Rybicki

The *Pterophyllum* genus is very wide ranging and extremely diverse in appearance. This diversity has caused some speculation when it comes to identification of many wild angelfish collections. There are currently three species of *Pterophyllum* recognized. They are *Pterophyllum scalare*, *Pterophyllum altum* and *Pterophyllum leopoldi*.

### Naming Synonyms for Wild *Pterophyllum* Species

The first name is the recognized species name. The synonyms are prior names that were proved incorrect and changed to the current name.

*Pterophyllum scalare* – synonyms are *Pterophyllum eimekei*, *Plataxoides dumerilii*, *Pterophyllum dumerilii*, *Zeus scalaris*

*Pterophyllum leopoldi* – synonyms are *Plataxoides Leopoldi*

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Check out April & June's Photo Contest Winners – Those are some Beautiful Fish!

## Pterophyllum Altum Biotopes

By Edgar Ruiz

*A biotope is an area of relatively uniform environmental conditions and distribution of plant and animal species throughout*

### Where is *Pterophyllum altum* found?

*P. altum* is strictly found in the Orinoco River basin. The basin is located about 2/3rd's in Venezuela and 1/3rd in Colombia. *P. altum* is also found in the Upper Rio Negro sub-basin, which though adjacent to the Orinoco system and very heavily influenced by the latter, is actually part of the Amazon River Basin.

The Upper Rio Negro is born from the junction of the Venezuelan Rio Casiquiare (an effluent of the Upper or Alto Orinoco, pronounced KAH-SEE-KYA-DEH) and the Colombian Rio Guainia (pronounced GWY-NEE-AH). The young Rio Negro runs along the Venezuelan and Colombian border for about 50% of its length before entering Northern Brazil. The Middle and Main Rio Negro are completely in Brazil.

All rivers east of the Andes and from the Rio Inirida northwards in Colombia empty into the Orinoco. The Orinoco later flows North and then diagonally northeastwards across Venezuela almost the total horizontal (W>E) length of the country and empties into the Atlantic Ocean.

A single species of *Pterophyllum* naturally inhabits all these waters, and that is *P. altum*. The Colombian and Venezuelan Llanos, Amazonia and Goajira regions are only separated by the lines you see on maps, many of the people living there are binationals.

So if your *P. altum* were caught most anywhere in the Orinoco basin, be it in Venezuela or in Colombia, they should look the same. Slight variations may occur, but never enough to merit considering them different species nor are these other

differences fixed, that is, they seem more dependent on diet or other external factors (i.e., Inirida fish seem to have a more coal colored barring while Ventuari fish may show more red pigmentation and chocolate barring).

### The Orinoco, The Casiquiare and the Rio Negro

For some years now, the topic of the "Rio Negro Altum" which some investigators consider a varying form of *P. scalare* that has been naturally affected by the *P. altum* genotype has been on the table.

In order to more thoroughly understand the discussion between Orinoco Altum (true *P. altum*) and the Rio Negro Altum (false altum) which is a high finned form of *P. scalare* sharing altum traits to varying degrees (sometimes almost identical to the Orinoco form), we first need to understand a little on how these rivers connect and flow into each other and how some aquatic species and/or populations can migrate between the basins.

We have talked of the Orinoco. It is a distinct basin, the fourth largest by volume on the planet, located in Northern South America between Venezuela and Colombia.

The Rio Negro, sixth largest river in the world by discharge volume, is part of the Amazon River Basin. It is the largest tributary of the Amazon/Solimoes System. Actually, the Amazon River proper is born from the junction of the Negro and the Solimoes. The Negro itself is born from the waters of the Orinoco and the Guainia. Orinoco waters come down through a 250 mile +/- serpentine river called the Casiquiare, which juts out Southwards over flatlands from a strong bend of the Upper Orinoco at a place where the left bank of

**Continued on Page 2**

People often ask me about water parameters regarding *Pterophyllum altum* (altum angelfish). I have the impression that some of us consider water parameters as an element of sole importance when it comes to trying to get *P. altum* to breed. We must start by remembering and always keep in mind that water parameters are only one of the several environmental factors we must simulate to have success in conditioning these more challenging species.

Three factors, once integrated into a single aquarium, should bring many a mystery out of spawning *P. altum*:

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This article discusses the biotopes where *P. altum* is found in the wild.

### What is a biotope?

Though the word "biotope" is many times considered synonymous to that of "habitat", to simplify this writing I will refer to habitat as a defined image within a biotope. In my original article I defined habitat as an area occupied by a single population of a species and biotope refers to an area occupied by a whole ecological unit. A biotope has relatively uniform environmental conditions and distribution of plant and animal species throughout. A habitat is more confined and delimited, more specific species will be found, those that have adapted to the mores specific parameters. We can speak of the Pozo Azul habitat, i.e. specifically, or the Middle Orinoco Biotope... the former is part of the latter, but the latter comprehends larger boundaries

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## ***Pterophyllum Altum* Biotopes**

By Edgar Ruiz

-the river is continuously overpowered by the swift waters coming from the Guyana Highlands (yep, here you can say GOO-YAH-NAH in English or GWA-YAH-NAH in Venezuelan Spanish)...note that this has nothing to do with already mentioned Guainia.

This river runs North to South from the Orinoco at a swifter or more moderate current depending on the season, be it wet or dry. It never runs the other way as some books say. Some species are able to swim up this current, larger characids, bagrids and aquatic mammals, but it also serves as a natural aquatic barrier for other species (Symphysodon, i.e.) and similar Heroine cichlids.

During the 70's, a paper was published by Axelrod noting the differences found among the genus *Pterophyllum* throughout the Amazon, Negro and Orinoco systems. This study emphasized how size, fin ray count, lateral scale count and other variables "grew" to the Northern boundaries of the distribution of the genus. The farther North you travel up the Rio Negro comes a stretch where apparently and evidently *P. scalare* starts to look more and more like *P. altum*.

For many years (actually still today), Venezuelan and Colombian Ichthyologists have considered *Pterophyllum* of the Rio Negro watershed as *P. altum*. But are they really?

Can a species look so much alike that even the trained eye may be fooled and once submitted to DNA analysis we find they are different? We still do not know. Do we need or want to know if otherwise, they are equally beautiful?

Rio Negro altums are hardier, easier to rear and grow, easier to breed...much easier as per reports, and they look so much like *P. altum*... but they're supposed to be *P. scalare*.

It seems that the genetic pool flushed down through the Casiquiare has beautifully masked and dressed the more Southern counterpart as if getting them ready for the famous "Carnaval" or Rio or Sao Paolo. And then... he trims down to the Scalare we all know and that has allowed us to get all the domesticated variations we see today.

Along the way, the journey takes us through cooler, swifter blackwaters affected by huge waterfalls running and plunging over the rugged highlands of the Guyana Shield, then over rolling hills until approaching the flatlands where the Amazon turns into a turbid freshwater ocean. The Orinoco Altum is born in the Guyana Highlands, The Amazon Scalare, its cousin, is from another place, almost another world.

And my narration is still so general, well I can only write about Orinoco Altum... The Peruvian Altum is another beautiful fish, but I'll pass on it...never having been to the Nanay or Peru. But ask me about Orinoco Altum, and then some, just across the borders from Puerto Ayacucho, where my son was born, or San Carlos de Rio Negro.

### **The Altum Habitat**

*P. altum* angelfish are found in three distinct biotopes along the Orinoco River and its tributaries. From North to South these are the Caño Llanero (pronounced Cán-yo Yanéthro); the Alto Orinoco Clearwater Stream or Rio Ventuari Biotope; and the Rio Negro Blackwater River Biotope.

### **Caño Llanero Biotope**

When we speak of "Caño Llanero" we refer to the creeks of the Venezuelan or Colombian Llanos region and they can be typically be described as a slow moving, silty, warm creek that flows into the tributaries of the Orinoco from its left bank

**"Caño"** is Spanish for Creek, and **"Llano"** is Spanish for flat plains. Thus, caño llanero refers to a stream running through a flat plains area.

and are mostly downstream from the junction of the Orinoco with the Meta River which comes in from Colombia. Some of these may occur to the South, upstream, on the Colombian side.

The Llanos are comprised of a huge extension of grasslands extending in an east central to southwest diagonal across Venezuela's horizontal center and into South Central Colombia. The Llanos are crossed by immense rivers, all tributaries to the vast Orinoco. To the West, in Colombia, the Inirida River more or less forms the southernmost border of the Llanos. The Vichada, the Meta and the Arauca Rivers are all Colombian born tributaries of the Orinoco. Further downstream (to the North and East) are the Apure, the Guanare and the Caroni Rivers, among many others in Venezuela.

The Caños Llaneros, for which this biotope is named, are smaller creeks that flow into these tributaries. It is within these creeks that *P. altum* of the Llanos will usually spawn. It is unlikely that they will find the necessary tranquility in the Orinoco and its major tributaries due to very high water volumes and currents. Major predators also inhabit the mainstreams (Payara, Pirahna).

The principal characteristics of the Caño Llanero are slow moving water with frequent pools forming along the creekbends. These pools are called "remansos" (quiet places). Water is clear but dark due to the heavy organic load coming in from the surrounding grassland and bogs. The clay soil also adds an element of turbidity during the rainy season as well as silt from the Andes mountains in those creeks that are born in the Andes foothills. Rainfall is heavy in the Llanos from about May through October. The water has virtually no measurable hardness. Clay is an acid soil, itself rich in organics and with barely null buffering capacity

In some Caño Llanero environments we may actually encounter some degree of measurable alkalinity. This is more frequent

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## ***Pterophyllum Altum* Biotopes**

By Edgar Ruiz

- in waters approaching the Bajo or northern Orinoco from the South. Some of these creeks can meet waters originating in the Guyana Shield where limestone is more frequent. Still, acid water prevails, the amount of localized buffers are almost null and this water is, as others where altum is found, very soft and always acid.

Water in a typical Caño Llanero will vary in pH from about 4.5 to 6.5 depending on the season and location. Water temperature will vary from about 82F to 88F, but may go down into the high 70's under a strong downpour. Maximum degrees of hardness will be one. Water current can vary from very slow, but definitely moving as in the remanso, to a moderate current that gives its dwellers a certain degree of aerobic work when leaving the banks of the creek. *P. altum* prefers very well oxygenated water with some movement.

As to plant life in the Caño Llanero, this is the most likely *P. altum* biotope in which we might find swordplants. *Ludwigia* are abundant in the bogs creeping in from the surrounding ground. In the bogs, where the creek may have its source, the water will usually be not over 2 feet in depth and covered with duckweed. Of course there can be deeper areas, and yet most of this bog will be just under knee depth. Totally common and to be expected here, are Anacondas and Babas (a small river alligator).



**A Southbound Caño Llanero creek in the dry season**

(note the still water, not so in the rainy season)



**A bog in the Llanos – frequent source or section of a Caño Llanero.**

**Altum fry and small specimens are frequently found here**

*(here the entire surface is covered with duckweed, open water far in background just before forest - beware Anacondas and Alligators).*

Most, if not all plants in this biotope are bog plants, not true aquatics. The substrata in these bogs are mainly clay, covered with a nice thick organic mulm which is replenished on a seasonal basis when the rain washes last years "dirty carpet" down stream.

*P. altum* will spawn just downstream, near the mouth of the creek, the very mild current at this point allowing the fry to come into the bog to feed. Large altum are seldomly found in the bog (also surely, large altum would even have trouble swimming in less than a foot of water).

## **Alto Orinoco Clearwater Stream or Rio Ventuari Biotope**

Heading southbound on the Caicara - Puerto Ayacucho Road, just north of Puerto Ayacucho we see the countryside changing, hills start showing up and the straight road begins to wind from side to side, and vegetation becomes much more abundant and denser.

We enter the Middle Orinoco region and from here down. The rainforest reigns supreme. Flanking down the lower hills east of the Orinoco we have quiet streams that penetrate the forest. These streams all eventually end up in the main waters which are only a few miles away. These are the streams that begin to resemble the Alto Orinoco, even if the true Alto, or upper -

Orinoco is still further south. (When we say upper or lower, we are talking of elevation and not north-south coordinates.) The Orinoco is born in deep South Venezuela and moves north-northeastwards across the country. The Alto Orinoco or Rio Ventuari Biotope is the hardest to access of the three biotopes, and thus is the least frequented.

This biotype is by far the most pristine. The sand here is white and clean, with heavy accumulations of dead leaves in the remansos. Giant *Vallisneria* may abound in the more sun exposed sections of the stream. Fallen trees adorn the underwater scenery, many partially covered with mosses above the water line, branches and bogwood accumulate in the bends. Large rocks and boulders are found along the banks. The water runs somewhat swifter than in the creeks described in the Llanos for these streams are hill streams born from the nearby "tepuyes" or flat topped mesas that are present throughout the Guyana Shield Highlands.

Water values here are typically pH 5.0 as average, degrees of hardness less than 1, and temperature 76 - 84° F. A downpour can bring temperatures lower, near the high 60s for a while.

Some creeks with these attributes may be found further North, near Puerto Ayacucho. It was in a couple of these streams that I saw *P. altum* caring for their clutches, hidden away under overhanging mangrove-like roots shooting from the sandy bank of the creek.

Here we have Pozo Azul which when I used to visit (1980s-90s) represented a typical hill stream which ran down through the canopy of the northernmost border of the Amazon rainforest in Amazonas State. This area is a transient ecosystem between the rainforest and the Llanos. Unfortunately, it was also the easiest place for anyone to collect *P. altum* due to its proximity to a populated town (Puerto Ayacucho is the State Capital) served by a

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## ***Pterophyllum Altum* Biotopes**

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national airport. Today, Pozo Azul is a popular tourist site with decent infrastructure and facilities.

To find *P. altum* in Pozo Azul we needed to walk upstream some 500 meters into a section which today has been deforested. I do not know if we can find *P. altum* in Pozo Azul today, but if so, I am sure it is not easy.



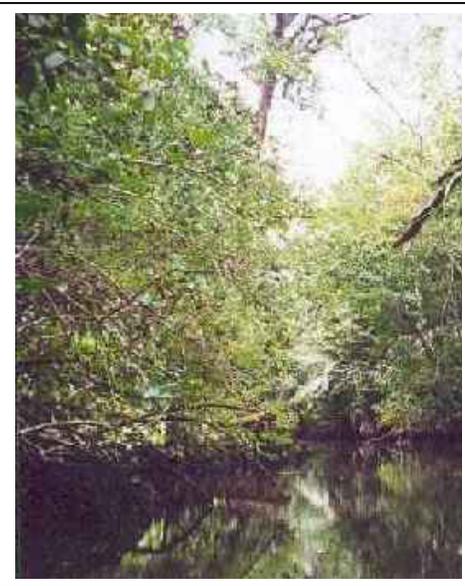
**Pozo Azul upstream**  
(note the current)

At Pozo Cristal, maybe 2 or 3 miles away, I saw my second (actually two distinct pairs) pair of fish, also caring for their clutches. Pozo Cristal is a mixed habitat resembling more a Caño Llanero than an Alto Orinoco Habitat. It runs over flatter ground than the nearby Pozo Azul. Horste Linke recollected fish only a few kilometers to the North in Laguna Paragueña.

Now here at Pozo Cristal we are close enough to the Orinoco that some larger species can be seen and the environment looks very much like the legitimate Rio Negro biotope (which is actually further much South). Several Cano Llanero type creeks empty into Pozo Cristal in its upper section. Cardinals are abundant here (curiously not in Pozo Azul). Rummies are also abundant among other smaller species.

## **Blackwater Creek or Rio Negro Biotope**

*P. altum* is also found in the Upper Rio Negro watershed. The Upper Rio Negro watershed. The Upper Rio Negro watershed is located in Colombia and Venezuela. The Upper Rio Negro runs along the Colombian-Venezuelan border for about 50% of its length before entering Northern Brazil. The Middle and Lower Rio Negro are completely in Brazil.



**Rio Negro Creek Biotope**  
(True blackwater creek)

The current here may be somewhat slower than in the Alto Orinoco biotope, but it is still plentiful in dissolved oxygen compared to the Lower Amazon and Lower Orinoco rivers. With water temperatures similar to the Caño Llanero biotope (warm), pH also averages 5.0 but can go as low as 3.8 in some habitats in. Hardness is virtually null. Again white sand dominates the substrate, water is very dark, yet very clear. Turbidity is present in some places when the organic layer of decomposed vegetation covering the sand substrate is stirred up into the water columns is. Again, branches, logs and leaf bottoms are frequently encountered. Some cataracts along the system help (though not as many as in the Guyana Highlands of the Alto Orinoco) contribute to the healthy d.o. levels.

## **Simulating the Altum biotopes in the aquarium.**

Now that we know more about the different biotopes *P. altum* occurs in, we will need to summarize the more important denominators common to all three in order to procure and simulate these in our aquarium.

The following 15 elements are in my opinion essential for the acclimatization of wild *P. altum* to captivity:

1. pH 4.5 to 5.5
2. Electroconductivity 0.5 to 0.15
3. Constant maintenance temperature = 84F (83-86F)
4. Therapeutic treatment temperature = No more than 88F-90F
5. Dissolved oxygen ( by means of appropriate circulation and UV)
6. Substrate – white river sand, 1-2mm, eroded, round, smooth (Torpedo Beach\* type or equivalent)
7. Dead hardwood branches (oak, mahogany, cherry wood and similar)
8. Peat moss, *T. catappa* (Ketapang leaves), alder cones, and similar organic media to naturally acidify and soften water and provide important astringent properties. Water should never be so dark that you cannot easily see your fish. You need to see your fish to know for sure they are healthy.
9. Muriatic or Sulfuric acid, to further acidify water if results cannot be obtained using natural botanical media alone. Only use diluted aqueous solutions and very slowly.

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## ***Pterophyllum Altum* Biotopes**

By Edgar Ruiz

10. I strongly recommend covering back and sides of the aquarium.
11. Sufficient UV filtration (to kill any microbes present in water column). This will in turn augment dissolved oxygen by controlling micro bioload and allowing improved oxygen levels.
12. Strong uniform and indirect aeration allowing complete water column turnover in all directions thus creating a moderate river current. Altum prefer more dynamic waters than discus.
13. Subdued lighting or simulation of a canopy habitat (light shaded and broken up by vegetation above)
14. Diet: Live foods are preferred. Mosquito larvae, black worms, gut loaded pin head crickets, Hydei fruit flies (the larger of the species commercially available), Daphnia magna, live clean cultured gut loaded feeder fish, etc. Frozen and freeze dried foods as well as prime grade pellets should also compliment the diet. Vitamin and mineral gut loaded live feed will do very much to increase growth rate and a strong immune system.
15. Bioload: Optimally 15-20 gallons per adult fish, but 10 gallons per adult will suffice as long as water changes are accomplishing null nitrite levels. Ammonia levels will not bother due to the low pH we will be keeping the fish at.

## **The *P. altum* Immune System**

Orinoco Altum come from some of the most pristine waters on earth. These water are very frequently adjacent to high waterfalls and very turbulent waters. Now, it is not that they are found under a waterfall or in a rapid river, but rather in the calmer parts, creekbends and banks, not far from the rush. These are not lake or still water fish despite the fact that they can be seasonally cut off from their natural habitat water and collected from shallow pools. We have found that altum collected from these shallow "fishing holes" represent the highest mortality rates. This is because these fish are frequently exposed to higher temperatures and low d.o. conditions. Unfortunately, these altum are usually the first that make it to the market because they are easily caught in areas that are relatively close to populated areas with transport facilities.

Having evolved as a species submitted to such acid and highly oxygenated water is most likely the easiest way to explain *P. altum's* deficient immune system. To put it simply, there are no bacteria or pathogens that affect the species that live in these waters. There natural conditions these species live in are "too right"...look at them like ET... it also happens to the Indians that live where altums are from... they can die from a simple cold. And I am not exaggerating.

And remember, *P. altum* are "fish of prey", true carnivores, and prefer to eat small tetras and any fish, crustacean or insect that can fit in their mouths (even if they do not fit easily)... this is where they get their minerals and vitamins from... from predigested vegetable matters in the guts of cardinal tetras (and similar)...their basic staple in nature.

The preying instinct seems to liven them up and keep them healthy. Live, swimming food is most important to fully condition mature altums when you are ready to breed them.

## **About the Author**

Edgar Ruiz was born in Venezuela, moved to Florida as an infant, then returned to Venezuela as a young man. He studied biology at Zulia State University (Maracaibo) from 1978 to 1983. From childhood, Ed has had a passion for studying and collecting ornamental tropical fish in the wild, with particular interest in species of the Orinoco. Although he didn't formally perform any work in the field of Biology after leaving the University, he spent 30 years traveling throughout the oceans, mountains, and rivers of Venezuela studying and collecting tropical fish.

Ed works professionally as a translator and interpreter for English and Spanish languages and is presently Medical Interpreter Coordinator and Spanish/English/Spanish Translator at the University of Utah Hospital in Salt Lake City, Utah. Ed is a regular contributor to and administrator on The Angelfish Study Group (TASG) forum on the Finarama website, which was built and is maintained by Michelle Ricketts, a founding member of TAS. Numerous discussions by Ed and several others who are highly knowledgeable about *P. altum* can be found on the TASG forum at: <http://www.finarama.com/home.htm>.

*Photographs were provided by Dr. Carlos Lopez, and Biologist Wilfrido Cabezas, colleagues of Ed Ruiz from many years ago.*

*TAS gives special thanks Ed Ruiz for sharing his experiences and knowledge with our members*

## Wild Angelfish Species

By Steve Rybicki

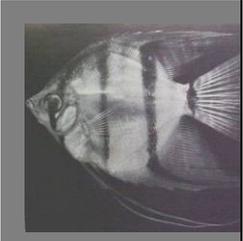
The *Pterophyllum* genus is very wide ranging and extremely diverse in appearance. This diversity has caused some speculation when it comes to identification of many wild angelfish collections. There are currently three species of *Pterophyllum* recognized. They are *Pterophyllum scalare*, *Pterophyllum altum* and *Pterophyllum leopoldi*.

### Naming Synonyms for Wild *Pterophyllum* Species

The first name is the recognized species name. The synonyms are prior names that were proved incorrect and changed to the current name.

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*Pterophyllum leopoldi* – synonyms are *Plataxoides Leopold*

		
Preserved specimen of <i>Pterophyllum scalare</i> from Dr. Kullander study.	<i>Pterophyllum scalare</i> showing typical profile.	<i>Pterophyllum scalare</i> that shows more of a brownish hue. <i>These are commonly sold as Peruvian Altums, in error</i>

**1st and 2nd photos** – Fish sold as *Pterophyllum leopoldi*. We suspect it is an unnamed species. Kullander suggests that similar fish are a Peruvian form of *scalare*. It has a lower lateral line count than *Pterophyllum scalare*, longer curving ventral fins and no distinctive predorsal notch.

**3rd photo** – These were imported as Peruvian altums, but are positively *Pterophyllum scalare*. Altums have much wider, browner bars, and more of them. Notice the strongly notched predorsal contour which differs from the wild in the previous photo.

**4th photo** – Peruvian *scalare*



We have observed many differences from the classification literature on fish that are labeled as a particular species. For instance, we've had fish labeled as *Pterophyllum scalare* with both notched predorsal contours and others with straight predorsal contours. The classification literature says that *scalare* have strongly notched predorsal contours, so what are these fish with the straight contours? They are definitely not *Pterophyllum altum*, and do not fit the characteristics of *Pterophyllum leopoldi* either.

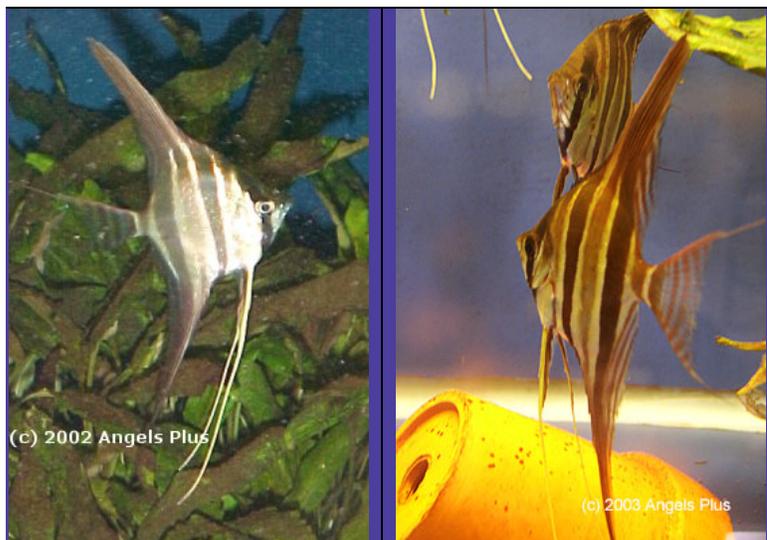
Also, where's the notched contours on our domestic *scalare* (as everyone calls them)? Some have it, most don't. Unlike *Pterophyllum scalare* and *Pterophyllum altum*, *Pterophyllum leopoldi* has a straight predorsal contour. There are at least two distinctively different wild angelfish with this straight contour. One appears to be an unidentified species, quite different from *Pterophyllum leopoldi* descriptions. We've seen both imported under the name *Pterophyllum leopoldi*, with the true *Pterophyllum leopoldi* most commonly imported under the incorrect name, *Pterophyllum dumerilii*.

As a side note, *Pterophyllum dumerilii* does not exist. It is not a valid species name. Incorrect names from importers are common, therefore passing on this information when naming wild angelfish types, is likely to be incorrect.

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## Wild Angelfish Species

By Steve Rybicki



**1st photo** – A 5-month old *Pterophyllum altum*. Notice the wider bars. A key identifier is the white space between the brownish bars. This white space is narrower than the bars. The bars are also browner and the intermediate bars are more prominent than in other angelfish species. This is especially noticeable in the **2nd photo**, showing an older fish. The strongly notched predorsal contour will become more pronounced as the fish ages.

Taking all this into account, our opinion is that there is at least one and probably more wild angelfish species yet to be classified, and at least two and probably more wild angelfish species that make up our domestic strains. Therefore, we think that those who classify our domestics as *Pterophyllum scalare* are most likely making assumptions that may not be correct.

*Pterophyllum* systematics is currently being studied and there is reason to believe that there will be some adjustments to the species level nomenclature in the near future.

### Domestic Angelfish Origins

Many Many people assume that *Pterophyllum scalare* is the only species that makes up our domestic varieties. There is considerable reason to believe that this is not the case. There is a high probability of there being at least a couple species of angelfish, yet to be classified and that these likely make up a significant percentage of the background of our domestic angelfish. We frequently import wild angelfish and we have noticed some significant physical differences on fish that are supposedly *Pterophyllum scalare*. Some have larger scales (lower scale counts along the lateral line). Others have markedly different predorsal profiles compared to the classification literature describing *Pterophyllum scalare*. Some have great variation

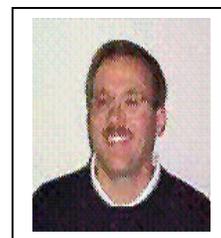
in fin shape and length, such as a strongly curving pelvic fins on one that is commonly labeled as *Pterophyllum leopoldi* by the exporters. We are quite certain they are incorrectly named. Kullander suggests these are Peruvian forms of *scalare*). Radical physical differences also suggest that some of these fish may indeed be an unidentified species.

Our domestic strains are the result of many decades of selective breeding. For the most part, the original crosses of wild angelfish were unrecorded and those that were tracked, were most certainly done by people who didn't know the difference between the angelfish species. This makes the origins of our domestic angelfish totally unclear. Our 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. All this results in creating a domestic angelfish that is a true hybrid with little more than a superficial resemblance to wild *Pterophyllum* species. It is strictly a man-made ornamental fish that is not meant to be re-introduced to the wild. It is simply foolish to say they represent any species of wild angelfish.

Collections of wild angelfish have brought forth the theory that all or some wild types (including *Pterophyllum altum*) are prone to interbreeding in the wild. This is not very likely, but it is currently being studied by a few scientists. There is the possibility that flooding of South American fish wholesale operations released some angelfish into waters they are not normally found in. This may have resulted in some hybridization. Hopefully, some new evidence will clear this up. Regardless of what occurs in the wild, interbreeding of *Pterophyllum* species in captivity was, and is a definite probability.

### About the Author

Steve Rybicki is one of the founding members of The Angelfish Society, has a degree in marine biology, and is well known for the outstanding quality of his angelfish. Steve has been keeping angelfish since 1965, and built his hatchery in 1982. This article is published on his website and is reprinted here with his permission. To read other articles written by Steve, visit his website at <http://www.angelsplus.com>.



*TAS gives special thanks to Steve Rybicki for sharing his experiences and knowledge with our members.*

## Make Your Own Sponge Filters

By Jan Kesler

This article is a follow up the May newsletter issue "Little Money, Lots of Fish"

One of the key elements to a healthy aquarium is the filtration. This photo essay may help with keeping supplies on hand and keeping costs low.

You will need:

- Foam (Sponge) Sheet (from fabric department)
- Plastic Canvas grid (from a craft department)
- Plastic Cord (used for kids bead jewelry)
- 2 Bottle Caps (Gallon milk lids work great)
- Scissors & Knife
- Phillips screw driver (width of an air line hose)
- Rubber bands



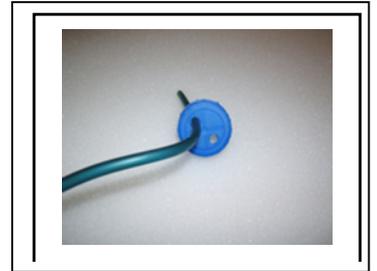
You can buy the sponge sheet at a fabric store for about \$13.00 and it is 24x96", so you can make a lot of filters!

Then I take a craft plastic grid, used for yarn art, and bend it in a roll to fit the inside of the bottle cap. The height should be about 4"

Take the Plastic Cord and mend the canvas together. I also go around the edge to help the cap fit securely. This will be the base.



Take one of the caps and puncture two holes the size of an air line. I heat up a Phillips screw driver and melt the holes in the cap. Place the caps on the top and bottom of the canvas base. Use rubber bands as a washer so it will fit snug.



Cut the sponge the size that will fit around the base with a half inch overlap. The length should be flush with the caps.



Cut slits in the Sponge about 1/2 inch apart.



Wrap the sponge around the base and attach it with rubber bands at the top and bottom.

You will need to add weight to the filter. I use about 15 copper pennies. Use later date coins to ensure more pure copper. Place the pennies inside the base and snap the cap on. Slide the air line in one of the holes.

Soak the Filter in a bath of bleach water. The sponge will turn yellow, This will remove the chemicals from the sponge.



Cost of a 4" filter: 35 Cents

## Message from the President

By Tamar Stephens



Here it is August already! I hope everyone has been enjoying a great summer. Speaking of summer, how many of you have been doing summer projects with your fish? Did

you set up an outdoor pond for your angelfish? Are you building or renovating a hatchery? I always find it inspiring to hear about projects people are working on.

I'm sure your fellow TAS members would like to hear about your projects. So take some photographs of your pond, your hatchery project, or any other summer projects, write up a paragraph or two (or more), and send it in to FinTAStic. We'd like to show off these summer projects in a future issue of FinTAStic.

I have to tell you about a TAS member who really impresses me with his enthusiasm for TAS. That person is **Ted Santos**. Ted regularly enters photos of his angelfish in our bimonthly photo contests. Then, he donated angelfish for door prizes for three of our 2009 meetings in a row – July, August, and September.

Comment by  
Ted Santos

“I take great pride  
in being part of  
TAS”



We have had other members generously donate fish too, including Chuck Hawks and Nancy Martens. That is impressive enough.

But donating angelfish is not the whole story. Ted went a giant step further than this. Ted has been a one-man recruiting team for TAS. For the month of July, he has been giving a one-year membership in TAS as a bonus to people who buy angelfish from him on Aquabid, based on either the price or on the enthusiasm of the bidder. What a splendid idea! Ted sponsored 10 new TAS members during the month July!

Why did Ted do this? He said, “I take great pride in being part of TAS and will do all I can to help spread its message!”

If you are a new member of TAS, welcome! If you want to get involved a good place to start would be to come to our regular monthly meetings, where we usually have presentations or guest speakers on topics of interest. Take photos of your prettiest angelfish and enter them in the bimonthly photo contests. You may also be a lucky winner of some beautiful angelfish to help you get your show tank or your home hatchery off to a good start!

*-Tamar Stephens*

## Welcome to our New Members!



New Members from  
May 5  
thru  
August 31, 2009

Howard Alshanski  
Steve Bell  
Jason Brown  
Chris Clark  
Jamie Coffman  
Garrett Davis  
Mark Delashmit  
Felix Diaz  
Steve Gallagher  
Joe Gargas  
Nataliya Hedrick  
Joe Higdon  
Evan Jenkins

Bill Jennings  
Stephen Kalish  
Scott Kitchens  
Clyde Lee  
Lisa Lee  
Otto Seebold  
Andre Segura  
Victor Sponheimer  
Robert Syracuse  
Luis Talavera  
Michael Wanda  
Robert Wright

## Late breaking news!



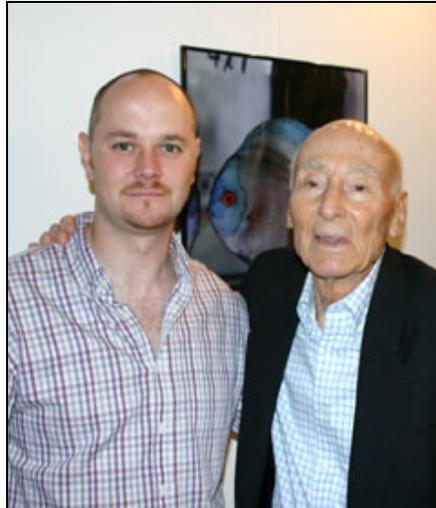
TAS has accepted an invitation to hold a TAS sponsored/judged/awarded angelfish show at the **2010 American Cichlid Association Expo** next summer!

Watch for more news, and come to our monthly meetings to find out how you can become involved!

## A Word from the Editor By Tony Vaughan

Hi there, my name is Tony and I live in Limerick (Home of the Spirit of Rugby) in Ireland. My interest in tropical fish began when I was just in my teen years and I've been keeping fish ever since then.

At first I shared a tank with my brother and kept mostly mainstream tropicals. Ireland is a long way behind everywhere else when it comes to fishkeeping as a hobby, It has come on leaps and bounds but unfortunately products are still overpriced, fish are still of a lesser quality and the variety is limited partly due to the fact that we live on an island on the most western part of the EU.



*Photo taken in Duisburg '06 at the Discus Championship, Duisburg Germany.*

*Tony is with the famous "Jack Wattley" one of the Worlds most Famous Discus People*



*Tony (right) with Heiko Bleher at the UK Discus show in 2005, where Tony was judging.*

*Tony judged at the UK Discus show in 05, 06, 07, 08, and was Head Judge in 2008*

I lived and worked in England in my early twenties and that was where I got bitten by the bug. It was also there where I bought my fish angelfish pair, a fabulous pair of D/D Blacks.....oh boy I wish I had them now!  
Anyway Angelfish will always be my first love.

-Tony Vaughan

### TAS Members in Action

Charles (Chuck) Hawks will be speaking about angelfish at the F.O.T.A.S. Convention presented by the Houston Aquarium Society. The convention will take place September 11-13, in Houston, Texas. More information on the convention can be found at <http://www.houstonaquariumsociety.org>

Chuck will also be speaking at the October 3 meeting of the Potomac Valley Aquarium Society. For more information see their website at <http://www.pvas.com/>.



**Website Revision will go on line September 1!**

We think you will like the new version, with easier navigation and a fresh new look!

The url will be just the same. Thank you, to former member Sabás (Benny) Escobar for the design. And many thanks to Don Mitchell, our webmaster, for building the new website!



**Next TAS Meeting**

– Be sure to check the calendar page for dates of upcoming meetings and other TAS activities. Our next meeting will be on Sunday, September 20. Meetings are usually held the third Sunday of the month in the TAS Chat Room at: [www.theangelfishsociety.org/chat](http://www.theangelfishsociety.org/chat)

## April 2009 Photo Contest Winners! Featuring “Best Marble Angelfish”



### 1<sup>st</sup> Place Ted Santos

Ted submitted two marble angelfish photos that tied for first place in the April photo contest. He has been keeping angelfish since he dad introduced him to them when he was 10 years old. He actively breeds angelfish and is particularly known for breeding koi angelfish with deep orange coloration.

When asked if he had a specific reason for selecting the angelfish for the winning photo, he replied, “Yes and my choice can be justified with a single phrase - excellent symmetry in all physiological aspects within the context of angelfish anatomy.” Ted has been a member of TAS for a little over four years

### 2<sup>nd</sup> Place Jarmila Bohmanova

Jarmila has been keeping angelfish for three years and currently have 4 breeding pairs and over thousand juveniles. She has been a member of TAS for one year.

In addition to angelfish, she also keeps discus, corydoras and tetras, and breeds gold rams

## What is an Outstanding Angelfish?

Ted Santos (on describing the characteristics that make an excellent marbled angelfish)

### General:

- Complete body parts
- Straight spine
- Acceptable body shape (not shaped like a football)
- Alert demeanor

### Finnage:

- An almost 90 deg. vertical dorsal and anal fin carriage
- Almost close to identical paired-fin lengths
- Un-kinked ventral finnage
- Good caudal fin flaring angle with unbroken filamentation
- Relatively short caudal penduncle

### Color and Patterning:

- Unique and aesthetic black patterning evenly distributed on both sides

### Body Specifics:

- Excellent statistical proportion between eye size/head size/body size.
- Relatively short snout
- Even black pigment pattern distribution on both sides
- Absence of mouth idiosyncracies such as an overbite or underbite
- Complete dorsal spikes
- Ideal dorsal initial-spike placement (positioned just above of the initial slit of the operculae's anterior)
- Gracefully graduated dorsal spikes

## June 2009 Photo Contest Winners! Featuring “Best Gold or Gold Pearlscale Angelfish”



**1<sup>st</sup> Place**  
Sarah Smith

Sarah’s family has kept angelfish all her life, and she herself admits to having “MTS” – multi-tank syndrome, with tanks in her living room, dining room, kitchen, upstairs, as well as three tubs outside, with a wide assortment of different kinds of fish in addition to her angelfish.

She is in the process of turning her garage into a fish room. Sarah has been a TAS member for about three years.



**2<sup>nd</sup> Place**  
Jarmila Bohmanova

Jarmila has been keeping angelfish for three years and currently have 4 breeding pairs and over thousand juveniles. She has been a member of TAS for one year.

In addition to angelfish, she also keeps discus, corydoras and tetras, and breeds gold rams

### TAS Photo Contest Judging Criteria

- **Body shape:** including head, operculum and body. An operculum is a lid or flap covering the aperture, on the the gill cover. Bodies should be round as possible or slightly higher than long. Head profile should be smooth with no humps, although a predorsal notch is perfectly acceptable. Does the eye look the right size? Are the lips too big
- **Finnage:** for example; are they symmetrical , fully formed, not torn. The fins should be straight without kinks or twists. Smooth gradual curves in the ventral (pelvic) fins are fine. A photo of an angelfish without all of its fins showing should be marked down. If it looks like the tiniest portion of the fin tip is hidden, then maybe would be okay, but anything approaching 1/2" or more should be marked down.
- **Pigmentation:** Are the colors / markings a good representation of the phenotype? Does the fish express the trait well?
- **Deportment:** for example; How the fish is displaying? Fins outstretched and the fish appearing alert and active? Clear eyes, no signs of disease.
- **Picture quality:** for example; crisp focus, clean glass, motion (blur), are the eyes visible (the pupil and iris).
- **Picture composition:** includes artistic issues such as: aquascape, how much the fish fills the image, the angle the fish is viewed (90 degree side view is best, anything else should be marked down), etc..

For additional information, Go to: <http://theangelfishsociety.org/photojudge.htm>

## The Angelfish Society Calendar of Events

### August 2009

**Aug 1<sup>st</sup>**  
Begins Photo Contest  
-Smokey

**Aug 16<sup>th</sup>**  
TAS Member Meeting  
9 PM EDT

**Aug 31<sup>st</sup>**  
HURRY! Last day to Submit  
Photos - Smokey

Join in on the Chat Sessions Every **Friday Night 9 PM Eastern time** – Chat sessions in the TAS Chat

Vote  
for the  
Best Smokey  
Angelfish!  
**Sept. 1- 15**



### September 2009

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
		1	2	3 <b>Vote for the Best Smokey</b>	4 CHAT 9 PM EDT	5
6	7	8	9	10	11 CHAT 9 PM EDT	12
13	14	15 <b>Last chance to vote for Smokey's</b>	16	17	18 CHAT 9 PM EDT	19
20 <b>BOD Meeting 7:30 PM EDT TAS Meeting 9 PM EDT</b>	21	22	23	24	25 CHAT 9 PM EDT	26
27	28	29	30	Friday Night CHAT 9PM EDT		



BOD Meeting  
**Sept 20<sup>th</sup>**  
7:30 PM EDT

TAS Member  
Meeting  
**Sept 20<sup>th</sup>**  
9 PM EDT



### October 2009

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1 <b>Begin Photo Contest - Blushing</b>	2 CHAT 9 PM EDT	3
4	5	6	7	8	9 CHAT 9 PM EDT	10
11	12	13	14	15	16 CHAT 9 PM EDT	17
18 <b>TAS Member Meeting 9 PM EDT</b>	19	20	21	22	23 CHAT 9 PM EDT	24
25	26	27	28	29	30 CHAT 9 PM EDT	31 <b>Photo Contest Last Day to Submit</b>

**Oct 1<sup>st</sup>**  
Begin Photo  
Contest  
-Blushing



**Oct 18<sup>th</sup>**  
TAS  
Member  
Meeting  
9 PM EDT



**Oct 31**  
**HURRY! Last Day to  
Submit Photos  
-Blushing**

**Nov 1<sup>st</sup>**  
Last Day to Submit  
Info for FinTAStic  
Newsletter

**Nov 3rd- 15<sup>th</sup>**  
Vote for the  
Best  
Blushing



**Nov 15<sup>th</sup>**  
BOD Meeting  
7:30 PM EDT



**Nov 15<sup>th</sup>**  
TAS Meeting  
9 PM EDT



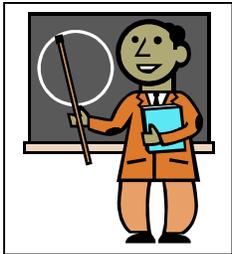
### November 2009

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1 <b>Submit FinTAStic Articles</b>	2	3 <b>Vote For the Best Blushing</b>	4	5	6 CHAT 9 PM EDT	7
8	9	10	11	12	13 CHAT 9 PM EDT	14
15 <b>Voting Ends BOD Meeting TAS Meeting</b>	16	17	18	19	20 CHAT 9 PM EDT	21
22	23	24	25	26	27 CHAT 9 PM EDT	28
29	30	Happy Thanksgiving!				
Next Issue of FinTAStic will be released November 15th						

## Board of Director's List

President: Tamar Stephens  
Vice-President: Lori Carr  
Secretary: Sarah Smith  
Treasurer: Nancy Martens  
Members at large (five):  
Charles Hawks  
Wayne Carlson  
Isaiah Jenkins  
Bob Reaves  
(vacant position)

## Meeting Presentations



If you miss a TAS meeting and want to see the presentation, you can view presentations at your convenience on the TAS website presentation page at:

<http://www.theangelfishsociety.org/PresentationsTAS.htm>.

Presentations are posted shortly before each meeting. Presentations are listed in reverse chronological order, with the most recent one at the top of the page. Our August presentation was on "Verifying and Documenting New Mutations." Our July presentation was on "The Local Fish Store." Presentations cover many topics, from introductory to more advanced, so peruse the list, and view at your leisure.

## Buy / Sell / Trade / Freebies

This section is reserved for future items that TAS members would like to buy, sell, trade, or give away.

Submit your ad to [newslettercommittee@theangelfishsociety.org](mailto:newslettercommittee@theangelfishsociety.org).

### Rules:

- Any items submitted must be no more than 6 lines text in length, and must contain the TAS member name, a phone number or email address or, you prefer, state your TAS or TAF forum name so you can be PM'ed. Those without contact info will be discarded.
- Please label your ad as "buy" "sell" "trade" or "freebie" so the committee doesn't need to guess at the correct category.
- Do not submit banners. You may submit a photo (no high resolution photos, please) which will be printed if room allows.



*Thank you to all Members and the Newsletter Team that make the FinTASic Newsletter possible.*

The FinTASic Team

Tony Vaughan – Editor in Chief  
Jan Kesler – Assistant Editor & Layout  
Sarah Smith – Staff Writer  
Tamar Stephens – Staff Writer  
Amanda Wenger – Staff Writer  
Isaiah Jenkins – Staff Writer

## Chat Room Problems?



If you are having problems viewing the chat line in the TAS chat room, there may be a compatibility problem.

But don't panic - Microsoft updated IE recently, and that affects the way AJAX software runs our chat room. To correct the problem, view, and use the chat properly you need to click on the New Compatibility Icon beside your Web Browser Bar. It looks like a page that is torn in half. This will fix the view of the chat entry bar problems. Please visit the chat room any time, day or night, at your convenience and check to make sure you can get into the chat room, and to use the compatibility icon if you have problems viewing the chat line. If you still have problems,

contact [webmasters@theangelfishsociety.org](mailto:webmasters@theangelfishsociety.org).  
If you have never visited the chat room, check it out at:  
<http://www.theangelfishsociety.org/chat>.