modern AQUARIUM

July 2024
volume XXXI
number 5

Greater City Aquarium Society - New York

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modern
AQUARIUM

Series III Vol. XXXI, No. 5 July, 2024

ON THE COVER

Our cover photo this month features *Apistogramma borellii*, native to habitats of the middle-upper Paraguay River and Paraná River of Brazil, Bolivia, Paraguay, Argentina, and Uruguay. The photo is from Joseph Ferdenzi, via our Fishy Friends Facebook page.

In This Issue

From the Editor

by Dan Radebaugh

As I mentioned in this column last month, Sue and Al Priest unfortunately cannot be with us at our regular meetings these days. Sue and Al have made tremendous contributions to this club and to **Modern Aquarium** over the years, going back to our magazine's inception, and before my time here with Greater City. So in tribute, I'm representing some of their articles over the years that I particularly like. After all, I'm not the only one here who hasn't been around for every issue, and there are some really good articles that pre-date a lot of us here. I hope all of you enjoy seeing these as much as I do!

Steve Sica has been a stalwart contributer to this magazine for many years, and on many subjects! Be sure and see Steve's "How I Got Reacquainted With the Black Tetra," on page 9.

Back when I was much younger than I am now, I first learned to swim under water, rather than on the surface. That may have been because I just didn't like getting water up my nose, and I did eventually learn to swim on the surface. At any rate, I was intrigued by an article (see page 11) that describes how some sharks hold their breath while diving in very cold water!

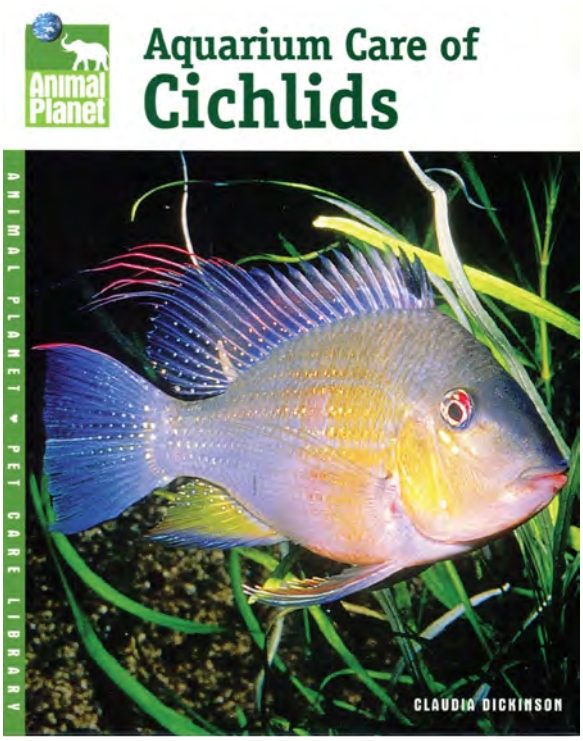
Our exchange article this month is by Dr. Paul Loiselle, writing on *Hypancistrus* 201, often sold under the name, Rio Orinoco Angel Pleco. Pretty fish!

Congratulations to our newest (I think) member/author, Walter Gallo! See Walter's "It Isn't a Hobby, It's an Adventure!" on page 16.

Remember, as always, we need articles! **Modern Aquarium** is produced by and for the members of Greater City Aquarium Society. Our members are our authors, and with ten issues per year, we always, *always* need more articles. I know several of you are keeping and/or breeding fish that I would like to know more about, and I'm certain other members would be interested as well. Share your experiences with us. Write about it! If you're a little unsure

about the state of your writing technique, don't worry—that's why editors were invented!

If you have an article, photo, or drawing that you'd like to submit for inclusion in **Modern Aquarium**, it's easy to do! You may fax it to me at (877) 299-0522, email it to gcas@earthlink.net, or just hand it to me at a meeting. However you get it to me, I'll be delighted to receive it! Enjoy!



by Greater City member Claudia Dickinson
(Animal Planet® Pet Care Library)
Hardcover – Also available on Amazon Kindle
https://www.amazon.com/Aquarium-Cichlids-Animal-Planet-Library/dp/0793837774

GCAS Programs 2024

March 6	Emperor Tetras
April 3	Inside Filters
May 1	Live Food Culture
June 5	Swordtails
July 3	Aquatic Plants
August 7	Night At The Auction
September 4	TBA
October 2	TBA
November 6	TBA
December 4	Holiday Awards Party!

Articles submitted for consideration in ***Modern Aquarium*** (ISSN 2150-0940) must be received no later than the 10th day of the month prior to the month of publication. Please email submissions to gcas@earthlink.net, or fax to (347) 379-4984.

The Greater City Aquarium Society meets every month except January and February. Members receive notice of meetings in the mail or by email. For more information, contact: Dan Radebaugh at (718) 458-8437, email to gcas@earthlink.net, or fax to (347) 379-4984. For more information about our club or to see previous issues of ***Modern Aquarium***, you can also go to our Internet Home Page at http://www.greatercity.net, http://www.greatercity.org, or http://www.greatercity.com.

President's Message

by Horst Gerber

I hope this month's **Modern Aquarium** finds you in good health! I would like to take a moment and introduce Marsha Radebaugh's new brainchild. The purpose of her new column is to facilitate our knowing a little bit more about the person sitting next to us. While we're all in the same club, I think it's safe to say that we don't really know much about one another, other than the fact that we all probably keep live fish. I recently spoke with one of our new members, and realized that it isn't really that easy to just show up in any kind of an organization and just seemlessly fit in and warm up to the other members. At Greater City A.S. we try hard to be one of the best clubs around, and we try to never lose sight of that goal! The recent rearrangement of our meetings is, I believe, a case in point. The Covid pandemic affected all of us, and a lot of clubs weren't able to survive. The stresses from the pandemic of course affected all of us in one way or another, and I'm glad to see that so far we seem to have weathered the storm.

Many of you have heard that the Botanical Garden is raising our rent, and it's too soon yet to tell exactly how that will be resolved. We're hopeful of a mutually beneficial outcome, but we'll have to see how our meetings with them go.

I'd like to specifically thank Marsha Radebaugh for all her work for the club as well as for the magazine! I tried my hand at writing last month, and it was so good that I was astounded! I had no idea that I could write that well! More of you should try your hand at writing articles for us! It's fun, and very gratifying when you see the finished result!

Remember, summer means happiness! Don't fight it! According to my doctor friend, the longer days of summer, with all that extra sunlight triggers an increase in serotonin in our bloodstream, that gets to our brain and boosts our mood, making us feel happier. Of course "happy hours" can probably help too!

Growing up in the summers of Hamburg, Germany, we could play in the swampy areas during frog breeding season, so we'd often find clumps of frog eggs that wriggled and felt like moving jelly in our hands. Much more interesting than store-bought toys that were scarce in those days anyway. That swampy area was my first experience with fishing — more precisely 3-spine sticklebacks! On one of the few occasions I can still remember, my grandfather took an interest in what I was doing. He showed me how to catch them! All you need is some nice-sized garden worms and sewing twine. Tie the worm at the middle of its body and dangle it in the water. A game warden told us we couldn't fish there, but we explained that we weren't really fishing, as we had no hooks — just worms and thread. After that explanation he didn't bother us any more!

We also caught daphnia. All we needed was an old broomstick, a wire coat hanger and an old nylon stocking. Then you just had to find them! The most prolific spots were round, 10 foot wide bomb craters maybe three or four feet deep. A few figure-eight sweeps and we had plenty of live food! Another fishing area was a good-size pond about a quarter to a half acre. One time I remember that pond was milky white. I don't know why that was, but there were lots of daphnia! I don't remember ever buying fish food!

Horst

GCAS Thanks You!

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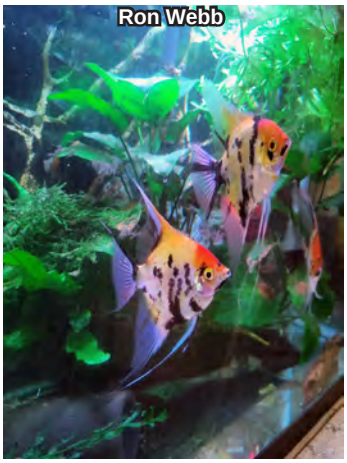
Fishy Friends' Photos

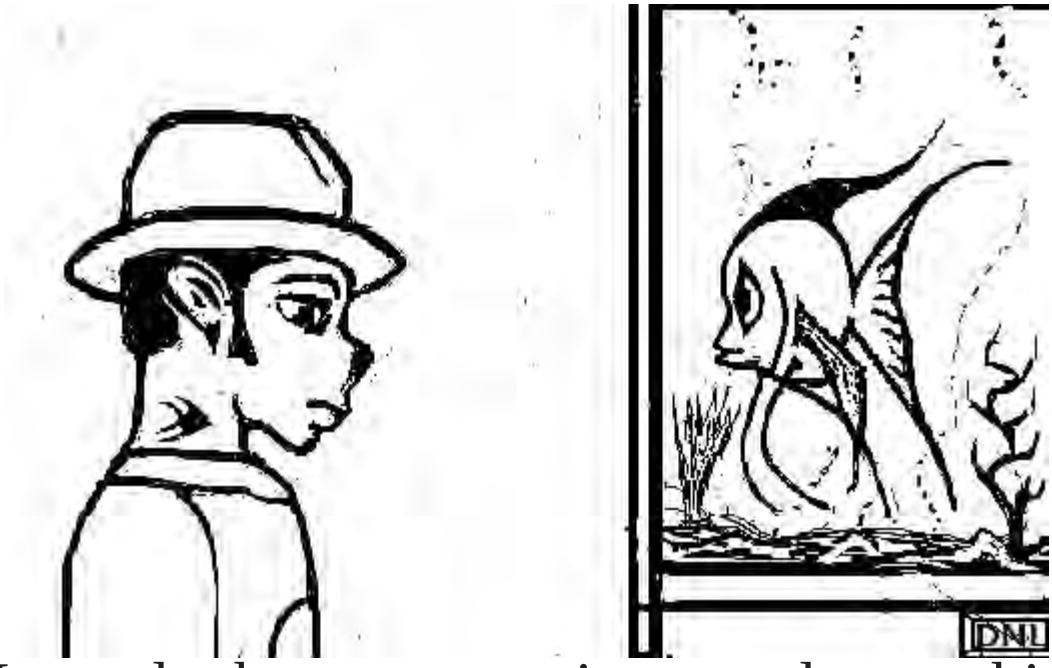
by Greater City Aquarium Society Fishy Friends

Below are photo submissions to our "Fishy Friends" Facebook group. I've left the subjects unnamed, but not the photographer. If you see a shot you like, and want more info, ask the photographer about it! I'm sure he or she will be delighted to tell you!



https://moaph.org/

June's Caption Winner: Joseph Ferdenzi

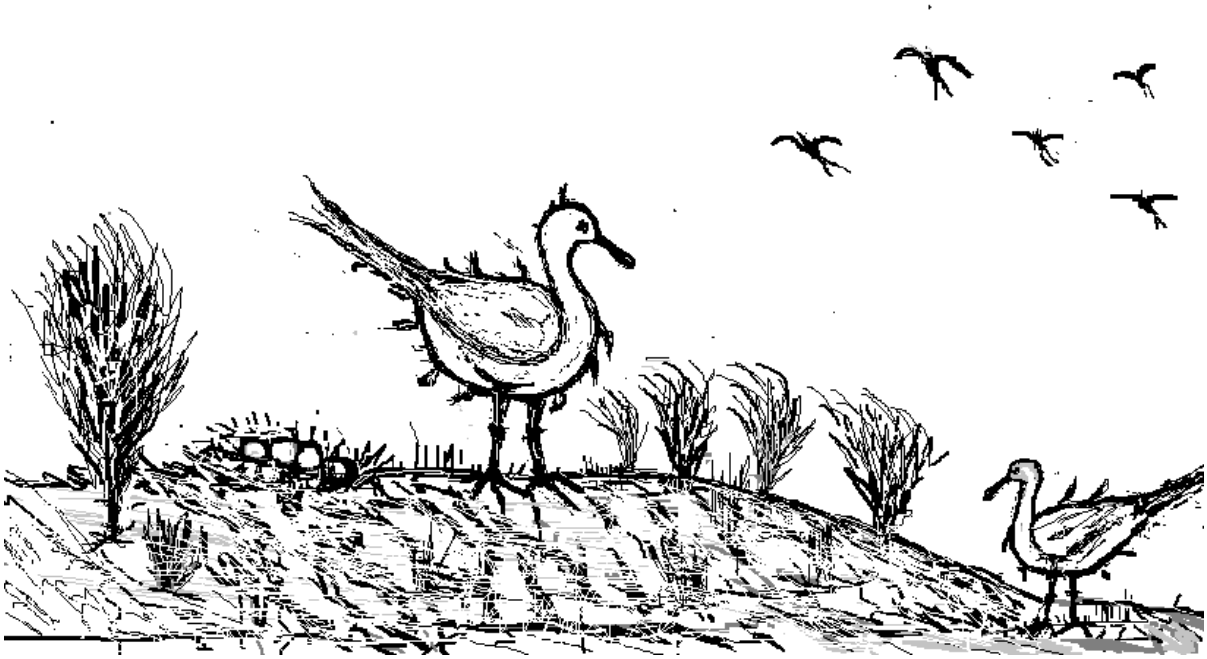


I wonder how my cousin wound up on his neck?!

The **Modern Aquarium** Cartoon Caption Contest

by Denver Lettman

In this contest, you, the members of Greater City, get to choose the caption! Just think of a good caption, then mail, email, or phone the Editor with your caption (phone:347-866-1107, fax: 877-299-0522, email: gcas@earthlink.net. ***Your caption needs to reach the Editor by the third Wednesday of this month****. We'll also hand out copies of this page at the meeting, which you may turn in to Marsha or Dan before leaving. Winning captions will earn ten points in our Author Awards program, qualifying you for participation in our special "Authors Only" raffle at our Holiday Party and Banquet. Put on your thinking caps!*



Your Caption:

Your Name:

How I Got Reacquainted with the Black Tetra

Story and Photos by Stephen Sica

A year or two after Donna and I purchased our home in the early 1990s, I decided that I would like to reenter the fish-keeping hobby. I purchased a 10 gallon fish tank in the Ozone Park, Queens Petland on Atlantic Avenue in a small shopping mall. After I set up the tank, I recall purchasing six fish. Three of them were a corydoras catfish and two black tetras. I don't remember the other three fish, probably a green swordtail pair too, but I do recall the cory passing away a few days later while I was observing it swim around its new home. The tetras did survive—probably no thanks to me. A few years later, I had another encounter with a small school of these fish. I don't remember this school at all, but I know that I had them because I recently came across photos that I had saved to the "cloud" from an earlier notebook computer.

I have a 30 gallon tank in my basement. It has been sitting on its table empty, except for stagnant water, since mid-2020. In February of 2024 I decided that I should put fish in it again. While recovering from a shoulder injury that I incurred as a result of tripping and falling when I hooked my toe in a curb cut rainwater drain, I decided that I would siphon the stagnant water and clean up the tank and glass top. I spent several weeks working on this project during the last month or so of winter as a form of self-physical therapy. I also went to the PT pros twice a week.

Since I have failed every so often to keep my fish in good health, or alive, I decided to use additives to the water. You know the stuff: water conditioner, seeding bacteria, even using a pH kit again that I owned; it was in brand new and unopened condition. I chose whatever I thought would help me after diligent online research. A few weeks later, the tank was ready to go. I was proud because it looked almost new. I added clean tap water and a few live plants towards the rear. I completed it with some background java moss and foreground stones.

Despite prepping and treating the water with all my new additives, I decided to put a few experimental fish in the tank. Off I went to

a local pet store to study the current selection. The store was in the midst of a sale; if you purchased three fish, you would receive a fifteen percent discount. I looked around for inexpensive fish that were a fairly good size and spotted a tank with hybrid black tetras whose fins were longer than the natural fish. Fish with longer fins seem to be in fashion for many years now. Being a traditionalist, I do not like the look of albino fish, glofish and some others. This carries over to other aspects of most hybrids even though many are attractive, and I do find them appealing to me. Sometimes you cannot find a reasonable specimen without it having that different look. Anyway, I was tempted to purchase three hi-fin black tetras but next to them were the same "natural" fish with a slightly lower price. I bought three of these but I do admit that I like the hi-fin look of these fish.

When I arrived home with my new fish, I placed them in a small holding container prior to acclimating them to their new 30 gallon home. After studying them up close, I felt that these are truly attractive fish. Their dull silver and black striped body is not exceptionally colorful but their shape is unique; their natural finnage is attractive; they are hardy, inexpensive and grow to a decent size—neither too big, nor too small. For a "plain and simple" fish, they definitely have the look in my opinion!

I netted and put each fish into the 30 gallon tank. After a few seconds they joined up in a mini-school and began swimming back and forth. One was bolder than the other two and would dart off into the background plants occasionally. Ten days later, the fish seem happy, healthy and well-adjusted to their new

and larger environment. After a few more days, I was beginning to think that I should buy at least three more and have a nice little school. I still am pondering whether to buy those additional three tetras. So much for a test fish. I think that it's time, once again, for someone to save me from myself!

Addendum

About three weeks after I wrote this article, I couldn't save myself and no one stepped forward to save me, so I purchased three additional fish for a small school of six. All six are doing well.

Diving Sharks May Hold Their Breath

by Freda Kreier

Scalloped hammerhead sharks may close their gills to stay warm on deep dives near Hawaii.

Even fish sometimes hold their breath in cold, dark, deep water. Scalloped hammerhead sharks living near Hawaii spend their days basking in warm surface waters. At night, these fish hunt for squid and other prey hundreds of meters below the surface, where the temperature is much colder. The sharks may hold on to body heat in the frigid waters by suppressing the use of their gills while diving, essentially holding their breath for around an hour at a time, researchers report in the May 12 **Science**.

Whales and other deep-diving animals hold their breath (SN: 11/7/20, p. 5). But this is the first time the behavior has been spotted in diving fish, says Mark Royer, a shark physiology and behavior researcher at the University of Hawaii at Manoa in Honolulu.

The body temperature of sharks is largely controlled by the warmth of the water around them. These fish lose and gain a lot of body heat while breathing through their gills, which snag oxygen from water passing through the organ.

"Gills are like giant radiators strapped to your head," Royer says. Because gills leak heat, many shark species tend to stick to roughly the first 100 meters of sun-heated water near the ocean surface, where temperatures hover around 26° Celsius. But tags attached to scalloped hammerhead sharks (*Sphyrna lewini*) — a species found in coastal waters all over the tropics — revealed that these sharks take nightly hour-long dives up to 1,000 meters below the surface.

At these depths, water temperatures can get as low as 5° C — far too cold for a tropical shark. To find out how the sharks endured such frigid temperatures, Royer and his colleagues attached specially designed instruments to the backs of sharks that had gathered in a shallow bay off Oahu to mate. "It was kind of like attaching a Fitbit to a shark," Royer says. "It allowed me to get precise details on what the shark was doing."

For the next 23 days, these sensors tracked how the sharks moved, how deep they swam, and how their internal temperature changed. "It was kind of like attaching a Fitbit to a shark," says Royer. "It allowed me to get precise details on what the shark was doing."

Sharks, the data show, went on V-shaped dives to the depths—plunging hundreds of meters before firing straight back up "like missiles,"

A version of this article appeared in the May, 2023 issue of ***Science News****.*

says Royer. But strangely, the body temperature of diving sharks barely budged for the bulk of the dive. It was only when the sharks slowed their ascent at a depth of around 290 meters, where the water is a little cooler than at the surface, that their body temperature dropped by an average of 2.8 degrees C.

The fish had to be shutting off their gills for most of the dive to hold on to their heat, the researchers concluded. It was only when the sharks had returned to a safer depth temperature-wise that they may have reactivated their gills—taking in oxygen for the first time in around an hour and sucking in cold water in the process.

Holding on to their heat while diving could help sharks move quickly in the deep ocean, says Julia Spaet, a shark ecologist at the University of Cambridge. While it is "absolutely possible" that these hammerhead sharks do this by suppressing gill activity, scientists will need to get direct evidence using cameras or other means to prove that it is true, she says.

At least one video from a deep-sea dive hints that this is the case. The gills of a scalloped hammerhead roaming at a depth of 1,000 meters near Tanzania appeared to be closed in footage captured a few years ago, the researchers note in their paper. This, along with the new study's find that hammerheads hold on to their body heat, makes Royer "very confident" that sharks are in fact holding their breath. "It just goes to highlight how extraordinary this species is," he says.

Hypancistrus L-201

by Dr. Paul Loiselle

A young male *Hypancistrus* L-201, often sold under the name Rio Orinoco angel pleco.

The past two decades have witnessed an explosive growth in the number of loricariid catfishes exported from South America. Members of this family vary tremendously in size, coloration and suitability as aquarium fishes. Representatives of the genus *Hypancistrus* score high in all three categories. They are relatively small, reaching maximum lengths of 4" - 5" [10.0 - 13.0 cm] SL. Their behavior towards other fish species is exemplary and unlike some other "pleco" species, they pose minimal risk to plants. Finally, their coloration ranges from attractive to positively spectacular. *Hypancistrus* zebra Isbrucker and Nijssen 1991 is probably the best known representative of the genus. However, as the genus as presently understood comprises five additional described and twenty-five undescribed species, it offers loricariid enthusiasts a wide selection of choices. As a quick glance at the best available title dealing with loricariid catfishes (Seidel 2008) will reveal, Hypancistrus come in spots, stripes and just about every conceivable permutation of the two!

The subject of this article is a representative of the spotted species group. *Hypancistrus* L-201 is native to the upper reaches of the Orinoco River drainage in Venezuela and Colombia. It shares its habitat with another spotted congener, *Hypancistrus contradens* Armbruster, Lujan and Taphorn 2007. The two species differ in morphology and details of their color pattern. *Hypancistrus contradens* is deeper- bodied that Hypancistrus L-201 and is marked with large white spots, whence its common name of Snowball Pleco. *Hypancistrus* L-201 sports somewhat smaller spots whose color ranges from yellow to coppery orange. Its coloration is reminiscent of that of juvenile *Synodontis angelicus*, hence its trade name Rio Orinoco angel pleco. It has also been sold as *Hypancistrus* inspector Armbruster 2002, a species described from the Rio Negro in Brazil. Unlike *Hypancistrus* L-201, the spots on its head are smaller than those on its body and its dorsal and anal fins sport broad black margins.

By loricariid standards, this is a small species. Males grow to just under 5" [12.5 cm]

This article previously appeared in the North Jersey Aquarium Society's ***Reporter*** *-- June, 2020*

SL, while females are slightly smaller. Unlike many other loricariids, *Hypancistrus* L- 201 is a moderately social species that tolerates the company of conspecifics reasonably well. As long as sufficient shelter is provided—three shelters/two *Hypancistrus* is a good rule of thumb—it is possible to house several pairs in a twenty gallon aquarium without risk of serious conflict. The ceramic "pleco caves" presently on the market are both convenient and quite readily accepted by these fish. Housing two or more *Hypancistrus* species together is not recommended. As most of these catfish do not occur together in the same locality, a necessary precondition for the evolution of effective pre-mating isolating mechanisms, the risk is high that in the absence of conspecific partners, different species sharing the same aquarium will hybridize. Towards other fishes, the behavior of *Hypancistrus* L-201 is exemplary. It will live amicably with a wide selection of schooling tankmates and gets along well with *Corydoras* and other callichthyid catfishes. Housing it with Synodontis and related catfishes or the deeper-bodied loaches is not a good idea, as these fish will compete with *Hypancistrus* L-201 for available shelters. While this species is quite comfortable sharing a tank with dwarf cichlids, it does not do well when housed with larger cichlids. Under such circumstances, *Hypancistrus* L-201 will spend most of its time hiding, behavior which can prevent it from getting its fair share of food.

Hypancistrus L-201 is not an algae eater. Its long, recurved jaw teeth are designed to seize aquatic invertebrates, not scrape algae. Seidel (2008) categorizes *Hypancistrus* as omnivores with marked carnivorous tendencies. These catfish will not prosper in captivity unless their diet takes this into consideration. While *Hypancistrus* L-201 is extremely partial to such frozen foods as bloodworms, glassworms and *Mysis* shrimp, it will also devour both gelatin-based and pellitized foods of with gusto. New Era Catfish Pellets© and Repashy Carnivore Formula© are particularly relished. This species will do well over a pH range of 5.5 - 7.5 and is tolerant of hardness values up to 10° DH. An inhabitant of flowing waters in nature, it both requires a moderate degree of water movement in its aquarium and is sensitive to high nitrate levels. A program of regular partial water changes is thus essential to its successful maintenance. *Hypancistrus* L-201 is a warmth-loving species whose water temperature should be kept between 78° and 85° F. [25° - 29° C.].

Seidel (2008) considers *Hypancistrus* L-201 to be an easily bred species. Reluctance to spawn is usually due to the fact that the water in the breeding tank is too cool. Male *Hypancistrus* have longer and broader heads than do females as well as a rather penis-like genital papilla that is quite evident when the fish is removed from the water. Like most other loricariids, this species deposits its eggs inside of a cave. The small clutch of 20 to 25 eggs is guarded by the male. Free-swimming fry appear 15 to 17 days post-spawning and can be reared on a diet of *Artemia* nauplii and *Spirulina*- based prepared foods. Growing juveniles appear to require a higher proportion of vegetable-based foods in their diet than adults and will munch on soft-leafed aquatic plants if this need is not met. While the male provides no care for the free-swimming fry, they are effectively ignored by adults.

While many species of *Hypancistrus* have been bred in captivity, the overwhelming majority of these fish in the trade are imported from South America. High transport costs combined with range state export bans and high demand for these strikingly colored catfish translates into high prices. Expect to pay from $35 to $75 for a single fish and don't be surprised to see triple digit prices for such spectacularly colored species Brazilian species as *Hypancistrus* zebra, *Hypancistrus* L-260 or *Hypancistrus* L-333. Finding *Hypancistrus* L-201 is a fairly straight-forward proposition, as it is exported from Colombia on a regular basis.

It can often be found in the tanks of larger retail establishments and is quite readily available from on-line vendors. Specimens may be a bit pricey, but the Orinoco angel pleco's combination of attractive coloration, placid temperament, hardiness and longevity guarantee that a purchaser who takes the plunge will definitely get his or her money's worth!

Literature Cited

Seidel, I. 2008. **Back to Nature Guide to L-Catfishes**. Fohrman Aquaristik AB, Jonsered, pp. 1 - 208.

Figure Captions

Figure 1. A young male *Hypancistrus* -201

GCAS Happenings

July

A warm welcome back to renewing GCAS members Evelyn Eagan and Steve Miller!

Last Month's Bowl Show Winners:

1 Stephen Sica
2 Richie Waizman

Unofficial 2024 Bowl Show totals to date:

Richie Waizman *8* *Bill Amely* *3* *Stephen Sica* *3*

Here are some aquarium societies in the Metropolitan New York area:

GREATER CITY AQUARIUM SOCIETY
Next Meeting: August 7, 2024
No Speaker**: A Night At The Auction**

GCAS Meets the first Wednesday of the month (except January & February) at 7:30pm:
Queens Botanical Garden
43-50 Main Street - Flushing, NY
Contact: Joseph Ferdenzi (516) 484-0944
E-mail: GCAS@Earthlink.net
Website: http://www.greatercity.net

BROOKLYN AQUARIUM SOCIETY
Meets the 2nd Friday of the month (except July and August) at 7:30pm: New York Aquarium - Education Hall, Brooklyn, NY 11229
Call: BAS Events Hotline: (718) 837-4455
Website: http://www.brooklynaquariumsociety.org

LONG ISLAND AQUARIUM SOCIETY
Meets: 2nd Fridays (except July and August) 8:00pm. Meetings are held at AMVETS Post 48, 660 Hawkins Avenue, Ronkoncoma, NY 11779
Website: https://ncasweb.thechinesequest.com/

NASSAU COUNTY AQUARIUM SOCIETY
Meets: 2nd Tuesday of the month (except July and August) at 7:30 PM. Meetings are held at:
Molloy Univerrsity - 1000 Hempstead Ave, Rockville Center, NY, Barbara H. Hagan Center for Nursing, Room 239
Contact: Mike Foran (516) 798-6766
Website: https://www.nassaucountyaquariumsociety.org/

It Isn't a Hobby, It's an Adventure!

by Walter Gallo

As someone who has been in the hobby since I was 5 (goldfish and angelfish in bowls — my first 10 gallon came four years later as a ninth birthday present), I have seen, heard, and done quite a bit in my 65 years as an aquarist. But that is not the reason for this article.

There have been many highs in my time — livebearer spawns leading to gouramis in my teen tears, purchasing Jewel fish at Aqua Stock (down the block from City Hall), keeping all of the various cichlids and catfish, discovering and joining Greater City, and even mentoring a newcomer to our hobby recently, passing along severum fry from a lineage I had purchased from fellow member Ron. He is now at seven tanks, so "mission accomplished!"

There were of course, the lows— the inevitable ''bad heater'' cooking my tanks, the "ich'' case that of course always happens late on a weekend, and when you are out of medication, the Oscar (*Astronotus ocellatus*) suicides, shocks from my electric cat (*Malapterurus electricus)*, bites from my Snakehead (*Channidae*), and a leak in my kitchen 125g that I caught in time. And one nightmare that I had eluded until now…

Last weekend on Saturday evening I experienced "cardiac syncope"' (medicalese for "fainted," not a normal experience for me) after drinking a glass of water. I woke up covered in water and blood, with multiple head gashes and 11 stiches on my back, after impacting with two 10 gallon tanks in my kitchen (see photo for the aftermath).

My first reaction of course was for saving my fish, and my comet goldfish were swiftly moved to a nearby tank, the Honduran Red Points (*Amatitlana* Sp. acquired from Dan Puleo) were another matter, as the broken glass left a fair amount of water in the tank.

After I was ambulanced off to Elmhurst Hospital, my non-aquarist wife Silvana was able to move the remaining fish by hand (!!!) to other tanks. We only lost three fish — unfortunately a medium *Synodontis* cat was among the departed.

This "New Perspective in Fishkeeping'' from INSIDE the tank (!!!) is something I hope to never repeat! And I have two follow-up doctor visits scheduled.

In the future, your highly jaded author will limit his new aquatic experiences to purchasing "new'' fish from the Greater City auction, like I did last Wednesday, and leave the "insights" to our finny friends!

A TOUCH OF GOLD

Betta midas

A Newly Discovered Species From Borneo

Article and photos by ALEXANDER A. PRIEST

Betta specialists have established "complexes" for the purpose of grouping the various Betta species based on shared or similar traits. Until very recently the only member of the "Anabatoides Complex" was *Betta anabatoides* itself, a species native to the southern half of Borneo. *Betta anabatoides* goes by the common names of the Large Unspotted Mouthbrooder, and the Giant Betta, although this latter term is now more commonly used to reference a larger-than-usual variety of *Betta splendens*. Recently, a shipment of *Betta edithae* intended for the ornamental fish trade originating from Pontianak, the capital of the Indonesian province of West Kalimantan on the island of Borneo, also contained what later turned out to be *Betta midas*, a new and previously unidentified species. *Betta midas* has now become the second member of the Anabatoides Complex. It differs from *Betta anabatoides* by being more slender, and having more gold-colored scales. The iridescent gold scales on the gill cover and body of *Betta midas* are the reason for the reference in its scientific name to King Midas (who, according to Greek mythology, turned everything he touched into gold).

Scientific Name: *Betta midas*
Common Name: None yet (Gold betta most likely)
Special consideration: anabantoid (air breather)
Standard Length: 2.5"
pH: 4.1 to 6.5 (acidic)
Water hardness: very soft to soft
Temperature: 72° to 76° F
Distribution: Indonesia (Northwest Borneo)
Reproduction: Paternal mouthbrooder
Temperament: Peaceful, jumper
Environment: low-light, caves and/or driftwood, tight-fitting cover with no gaps
Nutrition: primarily carnivore (live or frozen worms, brine shrimp, etc.)

Betta midas is a relatively small fish. It attains an adult SL (SL=standard length, a measurement from the tip of the nose up to, but not including, the caudal fin) of no more than 2.5 inches. Its yellowish pectoral fin is rounded. Its filamentous pelvic fin has a white tip. Its dorsal fin is located towards the back of the fish. The anal fin has pointed, extended posterior rays, and sometimes has a dark border. Aside from this, the body color ranges from brown to light brown, with a slightly darker area behind the eye.

The native habitat of *Betta midas* is a blackwater river running through a peat swamp forest, having highly acidic water with a pH of 4.1. The depth of that river varies from 20 cm (slightly less than 8 inches) to over 2 meters (about 6 and a half feet). In its native Borneo, *Betta midas* is found to the west and north of the range of *Betta anabatoides*.

I first encountered a reference to *Betta midas* in an article in **Labyrinth**, the journal of the Anabantoid Association of Great Britain[1]. There was no information in that article regarding its care or breeding, other than that it was a paternal mouthbrooder (all mouthbrooding bettas are paternal mouthbrooders), and no reference to sexual dimorphism. It was only after I acquired two specimens that I obtained a full copy of the scientific paper first describing *Betta midas*[2] stating that: "There appears to be no discernible external characters to differentiate the sexes." So, it was probably by pure good fortune for me to have acquired a true pair that have spawned several times. (Actually, I believe that the male of the species is slightly darker, and occasionally displays a light blue band on the anal fin. However, since I have never been privileged to witness an actual spawning, I cannot attest to this.)

Usually when I write about a fish, I like to read articles by other aquarists who have kept the same fish, in order to compare my experiences. This time however, with a fish that has been scientifically described less than a year ago, I could find no articles, amateur or professional, on the care and breeding of *Betta midas*. The article in **Labyrinth** that I referred to above was limited to a very brief physical description of *Betta midas*, excerpted from the original description of it by

My *Betta midas* spawning tank (the dark brown in the right rear is an almond leaf)

Dr. Tan. Even after obtaining a copy of the complete description by Dr. Tan, the only clue about the care of this fish I was able to extract was that *Betta midas* "is from a blackwater river (Sungai Kepayan) running through remnant and intact peat swamp forest, with a pH of 4.1." Dr. Tan's description of this species provided no specific information on how to care for it, or how to prepare it for spawning. However, the article did indicate that syntopic species (species sharing the same habitat within the same geographical range) include, among others, *Betta edithae*, a species whose care I **am** familiar with. (Remember that *Betta midas* was originally discovered in a shipment of *Betta edithae*.)

So, I provided my *Betta midas* pair with a bare-bottom (no substrate) 10 gallon tank with a tight-fitting glass lid (most betta species are jumpers), a dual-cylinder sponge filter, and a small power filter with the intake covered externally by a piece of filter media held in place by a rubber band, in order to prevent any fry from being sucked into the filter. I put in three different sized and shaped caves, an almond leaf, and a heater set to 76°F. The water was also pre-treated with Atison's Betta Spa, an extract including, among other things, Ketapang, or wild almond leaf. My New York City tap water is naturally very soft, and has a neutral pH. The Betta Spa and additional almond leaf dropped the pH to 6.0 (the pH of the water in which they came), which continued to drop naturally after the fish were introduced into the tank to its present pH of 5.5. No other species of plants or animals were in this tank.

Native habitat of *Betta midas*

An important side note is that species requiring very acidic water (a pH lower than 6.5) present special care concerns, in that at lower pH values the nitrogen cycle slows and eventually stops as the pH drops. Ammonia is of course still being introduced to the water by fish waste and uneaten food, but instead of being converted by bacteria into nitrites and then nitrates (the so-called "nitrogen cycle"), a chemical reaction occurs. Acidic water (water with a low pH value) has a high concentration of hydronium ions. A reaction occurs between ammonia and the hydronium ions resulting in the far less toxic (to fish) chemical compound ammonium. But, if you do a water change in an established very low pH tank and fail to adjust the

You need only look at the gill cover to see why this fish was named after a king who turned things to gold.

pH of the water you add, you risk an almost immediate pH shock to your fish, and a deadly ammonia spike.

I know of no betta species that is not mostly (if not exclusively) carnivorous. The large upturned mouth of *Betta midas* is a clue that this species is a surface feeder, most likely eating insects that land on the water's surface. So, I fed my *B. midas* mostly live, rinsed adult brine shrimp with added liquid vitamins, and live black worms, with occasional feedings of a high protein floating pellet (I used Atison's Betta Pro). Due to the almond leaf and the Betta Spa, the water was a light brown color. The tank was kept in a dimly lit environment, with full lighting provided only four or five hours a day.

My specimens were less than an inch and a half long when I acquired them. Since the scientific paper referenced 66.0 mm specimens (a little over 2.5 inches), I expected to grow them up in this tank, then transfer them into a 20 gallon tank in about year or so when, I supposed, they would have reached breeding size. Only a month or so after having acquired them, I was very surprised to see a few small fry darting about. While there are almost always exceptions, I have had very good luck with leaving the fry of mouthbrooding bettas in the same tank as the parents (and generally poor experiences with removing the fry). I could see no indication that the parents were cannibalizing or harassing the fry (mouthbrooding bettas provide no parental care once the fry are released, and generally just ignore them), so I left the fry in the same tank with the parents.

I always have a culture of microworms going (when I don't have any fry to feed, my Endler's Livebearers, *Poecilia wingei*, appreciate them). When I put some microworms into the tank, even more fry came out to grab a snack. Using a mortar and pestle I pulverized some dry food into dust to make a suitable fry food, which brought even more fry out from hiding.

I can now see several generations in that tank, still with no observable predation or aggression (at one point, one of the adult fish sported a torn caudal, but some fin nipping is a frequent occurrence in the spawning ritual of both bubblenesting and mouthbrooding bettas). Mouthbrooders typically have a comparatively small spawn, and considering the size of my specimens, I estimate less than a dozen fry result from each spawning.

While *Betta midas* is still very new to aquarists and not yet common in the aquarium hobby, their small size, relative ease of care, and easy breeding in captivity should make these fish quite popular in years to come.

References

[1] van der Voort, Stefan, 2009: "*Betta midas*: A New Species of Mouth Brooding Fighting Fish from West Kalimantan; Borneo, and Revision of *B. anabatoides* (Bleeker)" **Labyrinth**, 157, Sep. 09.

[2] Tan, Heok Hui, 2009: "Redescription of *Betta anabatoides* Bleeker, and a new species of *Betta* from West Kalimantan, Borneo (Teleostei: Osphronemidae)" **Zootaxa**, 2165: 59-68.

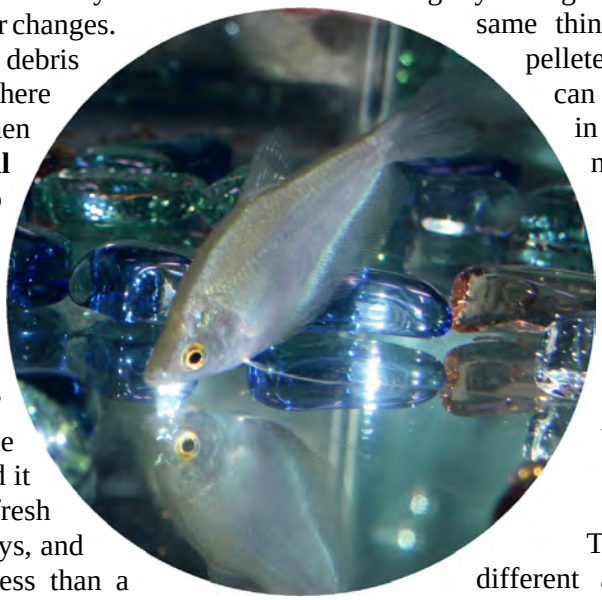
NEVER FEED A DEAD FISH !

by **Susan Priest**

In the March 2014 issue of **Modern Aquarium** (last month), Jules Birnbaum shared several "random fishkeeping tips" with us. Then he asked us to "please reciprocate." So, in the spirit of reciprocation, here are a few fishkeeping habits which I have picked up along the way.

SKIP THE GRAVEL

Some of the tanks which Al and I set up back when we were beginners (23 years ago!) still have a gravel substrate. However, at this point most of our tanks are bare-bottomed. The advantage of this is that you will do more frequent water changes. Why? Because the debris which collects down there is an eyesore, and when you see it, and you **will** see it, you will want to remove it promptly. Recently I did a water change on a bare-bottomed tank, and the next day I noticed a small "pile of stuff" that I didn't like the look of, so I syphoned it out. That tank got fresh water twice in two days, and it will probably be less than a week before it gets more.



This doesn't mean that the floor of your tank needs to be boring. You can toss in some colorful glass stones or marbles, a couple of coconut shells or empty flower pots, or even some free-floating or potted live plants. Also, when the glass floor is exposed it acts almost like a mirror, reflecting whatever is above it. Just leave plenty of open space on the bottom so you will notice the accumulation of debris, and keep your siphon handy!

THREE TIPS IN ONE

These tips all have to do with the use of dry fish foods.

1) When you open a container of dry food, label it with the date (most manufacturers don't put a date on their products). If you are still using it a year later, assume that it is past its nutritional peak, and toss it out.

2) Store your dry fish foods in the freezer.

3) Mix small portions of a variety of flake foods (some vegetarian based and some protein based) into a plastic bag. Shake it up and transfer the food to a container with a tightly fitting lid. (You can do the same thing with a variety of pelleted foods.) Then you can feed a varied diet all in one meal without the need to open several containers. Even the strictest of herbivores or carnivores will appreciate an occasional trip to the smorgasbord.

VARIATION ON A THEME

This is a slightly different approach to one of Jules' tips. I always keep a couple of unconnected sponge filters tucked behind a castle or a clump of plants in a well established tank. They can stay there as long as necessary (the longer the better) until you need to set up a new tank on short notice. It will provide a hefty supply of nitrifying bacteria, as well as plenty of infusoria for fry to graze on. You never know when you will find something irresistible at a GCAS auction. I can't remember if it is the Girl Scouts or the Boy Scouts whose motto is to "be prepared," but in either case, it's good advice!

*The article originally appeared in the April, 2014 issue of **Modern Aquarium**.*

THE BETTER TO SEE YOU WITH

This is the simplest tip. When you are siphoning water from a tank, put it into a white bucket. Advertently (is that a word?) or inadvertently, you might remove some fry, and a white bucket will give you a much better chance of spotting them. If your bucket is black, purple, or navy blue, any fry will most likely go unnoticed even if you are looking for them, and will end up being discarded with the water.

DON'T BE SCARED TO **C.A.R.E.**

Everyone reading this page knows what the **C.A.R.E.S. Preservation Program** is. I have heard it said more times than I can count that "I'm too scared to take care of a CARES fish," or "a CARES fish is too much responsibility for me," or "I have only kept one kind of fish. I wouldn't know what to do!" Maybe you have your own phraseology for this disclaimer. I confess to having said "not me" more than once myself.

GCAS members are better prepared to fight for the endangered fishes of this world than any other collection of people I can think of, and there is plenty of help available. So don't hold yourself back, and don't be afraid to try. There is no one more qualified than you!

NEVER FEED A DEAD FISH

Obviously no one would deliberately do this. The point I want to make here is to be observant of your fishes every day, especially when they are eating. Are they approaching the food with their usual vigor? Is one of the fish being pushed aside by more aggressive ones? Is one of them grabbing food into its mouth and then spitting it out? Is the food still there an hour later? A fish which is not eating should be isolated. It may be ill, or near death, and could endanger the well being of the others.

MIRACLE GROW

Last but not least, don't discard any perfectly good fish water (fresh water only) when there is a plant nearby that would love to have it. I have offered up this tip before, but it can't be over emphasized. Fish water is the perfect fertilizer for your terrestrial plants. The more stubborn the plant, the more it will benefit. Besides, you already have an abundance of it, **and** it is **free**!

My houseplants have been reaping these benefits throughout the winter, but soon I will be filling my front and back patios with as many pots of flowers as space will allow, and planting row upon row of the same varieties of tomatoes and peppers that I have been growing for years. Then there are the raspberries, which are nothing short of a gift from heaven. Spring is when I start to skip the buckets and siphon water from my tanks straight into watering cans. This makes for fewer steps between the tanks and the plants, and with water weighing in at 81/2 pounds per gallon, all shortcuts are appreciated!

IN CONCLUSION

I know that there are a lot of you who never touch a bucket, and I know it sounds like I do a lot of siphoning and carrying of buckets, but I really don't. I have a few five and ten gallon tanks for which that is the only practical method to change water. They have also served as the best examples of some of the tips I have been describing.

I hope that each of you has found something here to enhance your enjoyment of the time you spend with your fishes, and that all of your terrestrial plants will do swimmingly well. Spring is finally here!!

PHOTO:
A female moonlight gourami (*Trichopodus microlepis*) frolicking among the moon rocks.

[***Trichopodus*** *microlepis* was formerly called ***Trichogaster*** *microlepis.*]

Pictures From Our Last Meeting

Photos by Marsha Radebaugh

Everyone is ready!

So are the auction tables!

The Men in Yellow!
Tony Siano and Ed Vukich

The Men in Black (and Yellow)!
Pete d'Orio and Jeff Bollbach

Donna Ansari with son Nadim, who's going on 10!

Steve Sica checking out the auction table

I said, we're ready!

Dan Radebaugh with door prize winner Hugh Brown

GCAS President Horst Gerber and President Emeritus Joe Ferdenzi present Leonard Ramroop with his Lifetime Membership Award!

Bowl Show Candidates

June Bowl Show Winners:
1st Place: Steve Sica
2nd & 3rd Place: Richie Waizman

GCAS Member Discounts
at Local Fish Shops

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10% Discount on everything.

10% Discount on everything.

10% Discount on everything.

10% Discount on fish.

10% Discount on everything.

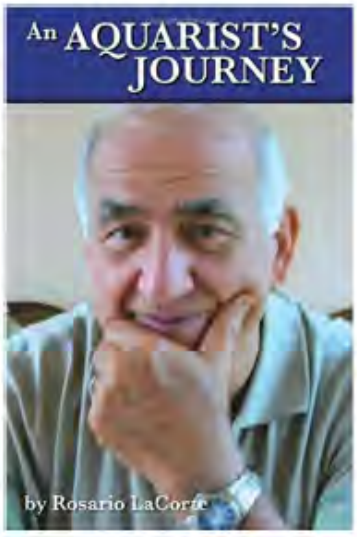
10% Discount on everything except 'on sale' items.

An Aquarist's Journey

Rosario La Corte is one of the world's leading authorities on breeding fish and he has written numerous articles and books, contributing greatly to our understanding of fish and their habits.

Now, for the first time, here is a compilation of his travels, adventures, successes (and, very occasional failures) all relating to collecting, keeping, and breeding fish, and in his own words (and edited by **Modern Aquarium**'s Editor, Dan Radebaugh).

Available in softcover at Amazon.com



BOWL SHOW RULES

There is a Bowl Show at every GCAS meeting, except our Night at the Auction/ fleamarket meeting and our Holiday Party and Awards Banquet meeting. Bowl shows are open to all members of GCAS. Rules are as follows:

- Only current GCAS members may enter fish in the Bowl Show.
- There is a limit of 2 entries per member per meeting.
- Unlike some other clubs, every month is an "open" Bowl Show at the GCAS (i.e., there is no "theme," such as that one month cichlids are judged, the next livebearers, the next anabantoids, etc.).
- Any fish that wins any prize (1st, 2nd, or 3rd) may not be entered again in the same meeting year.
- B.Y.O.B. (Bring Your Own Bowl!) Entrants are responsible for providing suitable containers and suitable water for their fish. These containers must be clear on at least three sides.
- Only one fish per container (i.e., no "pairs").
- No plants, ornaments, or equipment (filters, airstones, etc.) are allowed in the judging tank (an external mirror, or opaque cards between containers is acceptable, as is a cover that does not obstruct side viewing).
- Points are awarded: 5 points for 1st Place, 3 for 2nd Place, and 1 for 3rd Place.
- Ribbons are awarded: blue for 1st Place, red for 2nd Place, and green for 3rd Place.
- The person with the most points at the end of the meeting season receives the Walter Hubel Bowl Show Champion trophy at the Awards Banquet.
- The decision of the judge(s) is final.
- A running UNOFFICIAL total of the points awarded is printed in **Modern Aquarium**. Only the tally of points maintained by the Bowl Show Coordinator is official.

- **In case of ties**:
- 1st Tiebreaker – most 1st Places
- 2nd Tiebreaker – most 2nd Places
- 3rd Tiebreaker – most entries

A Golden Find: New Species of Tetra Discovered in Amazon!

A series by the Undergravel Reporter

In spite of popular demand to the contrary, this humor and information column continues. As usual, it does NOT necessarily represent the opinions of the Editor, or of the Greater City Aquarium Society.

Depending on which scientist you ask, you will often hear that humans have only explored between 5-25% of the world's oceans, which cover over 70% of the Earth's surface. As it turns out, however, some of the world's freshwater ecosystems remain unexplored as well.

According to Shoal Conservation, 243 novel freshwater species of fish were identified in 2023. One such species which caught the Undergravel Reporter's eye is the goldfin tetra (*Moenkhausia guaruba*), sometimes written as golden tetra but *not* to be confused with the gold tetra (*Hemigrammus rodwayi*). The goldfin tetra was named after the beautiful golden-yellow parrot, *Guaruba guarouba*, that is found in the same habitat in Brazil.

The goldfin tetra sports the classic tetra shape, with striking golden fins and a silver body with a golden sheen. The researchers who identified the goldfin tetra collected it in crystal clear waters and believe that the bright coloration would allow the tetras to easily recognize other goldfin tetras. The goldfin tetra is quite large for a tetra and is likely the largest species within the *Moenkhausia* genus, which contains almost 100 species.

Murila Nogueira de Lima Pastana, the fish curator at the Museum of Zoology at the University of São Paolo, was motivated to look for the goldfin tetra based on an unidentified specimen in the museum's collection from the early 2000s, though the formalin preservation process significantly dulled its colors. Mr. Pastana was certain he had a novel species, but collecting live specimens in order to positively identify it was a daunting task.

The goldfin tetra habitat exists within the perimeter fence of a massive Brazilian Air Force base in the Amazon. While the military base has apparently protected the biodiversity of the inhabitants within its fence, it created logistical problems with the collection. Mr. Pastana spent over six months communicating with the Brazilian military before he received permission to enter the perimeter fence. The actual trip required a four-hour flight from São Paolo into the nearest state capital, followed by a 12-hour drive deep into the Amazon. Mr. Pastana and his research team then had to find a small gate in the perimeter fence located "in the middle of nowhere," and at least two to three hours away from the nearest village by car (one wonders why the Brazilian Air Force would want such a remote outpost).

Mr. Pastana and fellow researcher Arthur de Lima noted that while much of the Amazon's biodiversity is threatened by logging and agriculture, the Brazilian military may be (unintentionally) preserving many rich habitats with yet-to-be-identified species such as the Goldfin tetra.

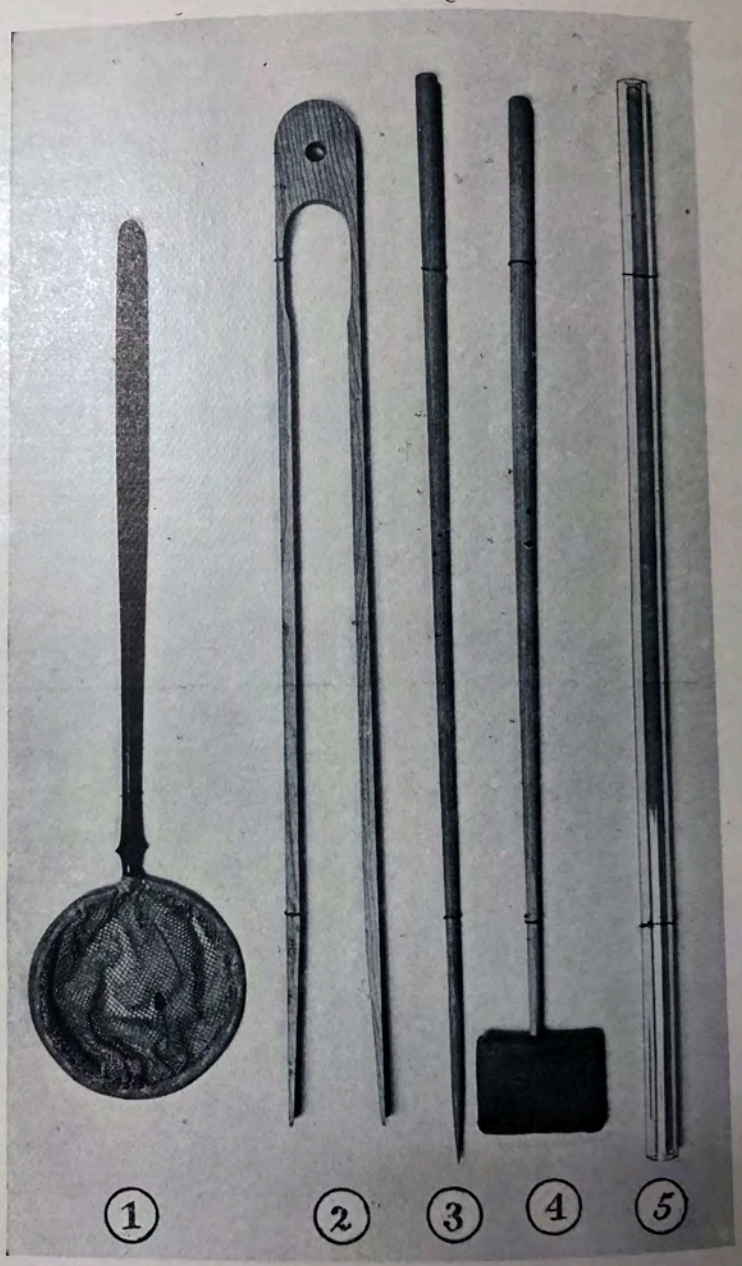
While the difficulties associated with collecting the Goldfin tetra mean it is unlikely to end up in your local fish store any time soon, the Undergravel Reporter respectfully asks that if anyone somehow gets their hands on this stunning fish, they promptly breed it and bring the offspring to the next GCAS Auction. The Undergravel Reporter will bring his wallet. Thanks in advance!

Source:
https://shoalconservation.org/wp-content/uploads/2024/03/New-Species-2023.pdf

From The Pages of Yesteryear

"The Care of Home Aquaria"

by Raymond Osburn 1914



IMPLEMENTS OF USE TO THE AQUARIST.

1. Dipnet.
2. Wooden forceps.
3. Feeding stick.
4. Cleaning swab.
5. Glass tube for removing refuse.

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