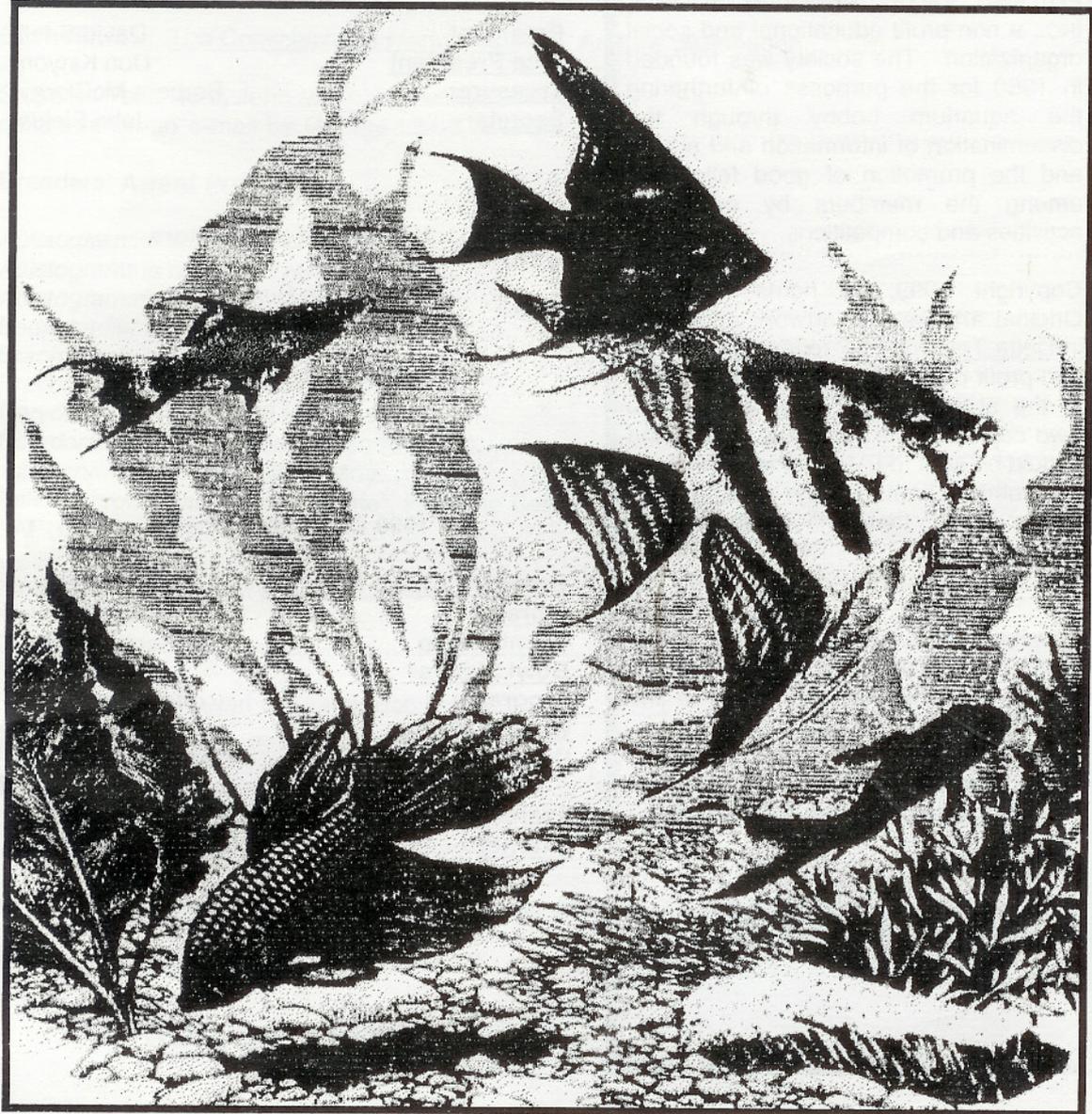


DELTA TALE

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POTOMAC VALLEY AQUARIUM SOCIETY

Vol. 30, No. 2-3



PVAS DELTA TALE

Volume 30, Numbers 2-3

Special Double Issue

Delta Tale is published bimonthly for the benefit of the membership of the POTOMAC VALLEY AQUARIUM SOCIETY, INC., a non-profit educational and social organization. The society was founded in 1960 for the purposes of furthering the aquarium hobby through the dissemination of information and advice and the promotion of good fellowship among the members by organized activities and competitions.

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From the Editors' Tank

Thirteen years ago Ronald Reagan was president, the Soviet Union was intact, yours truly was in seventh grade and John Mangan took on the challenge of editing Delta Tale. By my reckoning, that's one third the lifetime of the Potomac Valley Aquarium Society! I won't embarrass him any more than that, but please give John a pat on the back for a job well done the next time you see him. Inevitably, when the editor changes, so does Delta Tale. We have some exciting things planned, and some that are somewhat mundane as well. Hopefully you'll like the new look and the new features, and will be encouraged to contribute articles for the enjoyment and benefit of your fellow club members.

One of the least noticeable, but most drastic, changes to Delta Tale is that the publication is now being prepared entirely on computer. Aside from making the Editor's job a little easier, this means that contributing articles will be easier for club members as well. You may now submit articles on floppy disk or by e-mail to dt@pvas.com. Of course, we'll still be happy to accept articles on paper as well. In addition to facilitating production of the Delta Tale, computerization begins the process of posting all articles on the World Wide Web. Many of you are aware that PVAS has its own web page (www.pvas.com) where information about the club is posted. Now the club's articles will be posted there as well. You won't have to dig through your old issues to find that article you've been looking for, but rather will soon find them on the web. The process of posting articles will include past issues, not only those which are submitted in and after this issue.

Speaking of contributing articles, I've noticed recently that most of the articles submitted to Delta Tale have been breeding reports from Breeders' Award Program participants. For those folks, keep up the good work! These are not, however, the only articles that are accepted for publication. Many club members would like to hear what you have to say on a variety of aquatic topics. These could include aquatic plants, book reviews, your favorite fish tank, basic how-to information, live foods, fish poetry, or any other topic relating to aquaria and the hobby. The only requirements for publication are that the author is a PVAS member, the article is original, and the article is related to aquaria. You don't have to be Shakespeare or Hemingway (Lord knows I'm not!) to submit works. In fact, we will try to correct typos, spelling and errors grammatically. The point is, if you find something interesting enough to write about, someone else will find it interesting enough to read. In addition, we are discussing the possibility of recognition similar to the BAP for members who contribute articles.

Two of the new features that you'll find are "Nostalgia" and "Outside the Fishroom". In Nostalgia, we'll reprint an article from a previous Delta Tale. While perusing the past issues, I've noticed that there are great articles about nearly-forgotten fish, basic how-to's and generally what the club members were up to way back in the days of covered wagons, chrome-framed aquariums and Apple II computers. To this end, please bring any old Delta Tale copies to the next PVAS event so that I can photocopy them for the archive. In Outside the Fishroom, we'll reprint articles selected by the Exchange Editor from other clubs around the country. Hopefully we'll gain a small insight on what folks in other clubs around the country are doing and learn about fish that don't tend to be the focus of PVAS members (What? People actually keep fish other than corys, killies, and cichlids?). Enough of my chatter; please enjoy this double issue of Delta Tale.

What's Happening

PVAS is pleased to announce the October 1999 election results for the upcoming year:

President: Dov Goldstein
Vice President: David Snell

Treasurer: Barbara McClorey
Secretary: John Fields

Board of Directors, 1999-2000: John Burns, Mike Cardaci, Don Kinyon
Board of Directors, 2000-2001: George Richter, Joe Szelesi, Lorne Williams

The members would like to thank David Snell for his two years of extraordinary service as President of PVAS. Great job, Dave!

Calendar:

November 13: Fall Workshop and Banquet

Schedule of Events:

9:00am Registration desk opens
10:00am **Ray "Kingfish" Lucas**
"Fish Nutrition"
11:30am Lunch Break
1:00pm **Rosario LaCorte**
"Collecting in Brazil"
2:30pm **Charlie Grimes**
"Live Foods"
4:00pm **Bing Seto**
"Discus"
6:30pm Fall Banquet at J.J. Muldoons
Featured Speaker: **Charlie Grimes**
Registration is required
Members: \$15
Non-Members: \$20

PVAS thanks Mardel Laboratories, Inc. for sponsoring Charlie Grimes' appearance and Ginger, Inc. for sponsoring Bing Seto's appearance.

December 13: Holiday Dinner and Party

November 14: Fall Auction

Schedule of Events:

9:00am Registration begins
11:00am Auction begins
7:00pm Approximate time for end of auction

The Fall Workshop and Auction are held at: Quality Suites-Shady Grove
3 Research Boulevard, Rockville Maryland
I-270 to Exit 8, Shady Grove Road. Turn left onto Shady Grove Road. At the second light, turn left onto Corporate Boulevard. Quality Suites is visible on the left.

Auction registration forms are now available online at www.pvas.com. Sellers are still required to register in person to receive a number and item labels.

Please visit exhibits by the Chesapeake Area Killifish Club at the Fall Workshop and Auction, and by Oodles of Angels and Marineland at the Fall Auction.

Book Review: A Fishkeeper's Guide to South American Catfishes

Gene Moy

A Fishkeeper's Guide to South American Catfishes

By David Sands

Tetra Press 160036

ISBN 3-923880-97-9

Tetra Press publishes several "Fishkeeper's Guides" devoted to specialty groups of aquarium fishes. As with other books in the series, the format is a handy 4.5" by 8.5" with lots of photographs in about 120 pages.

I picked up this book in trade for some fishes that had outgrown my tanks. As I am gaining an appreciation for *Corydoras* catfishes, I thought this book would make a good addition to my aquatic library.

The book is organized into two parts, with the first part devoted to an understanding of the habitat of South American catfishes, the care and requirements of these fishes. There is a section devoted to providing an introduction to the variety of catfishes available. The first part also discusses breeding of these catfishes in a general sense.

The second part of the book provides representative examples of selected species, with additional species-specific information. Catfish families represented include: *Callichthyidae* - Dwarf Armored Catfishes to include *Corydoras* and their relations; *Loricariidae* - Suckermouth Catfishes to include *Plecostomus* and their relations; *Aspredenidae* - Banjo Catfishes; *Auchenipteridae* - Driftwood Catfishes; *Doradidae* - Talking Catfishes; *Pimelodidae*; as well as some of the larger catfishes such as Shark Catfishes, the Redtail Catfish, and Shovelnose Catfishes.

The part that I really like is the information on some 31 species of *Corydoras* which are covered with subtle details on some similar, closely related species.

The book does contain an error in the placement of two photographs - the picture of the Clown Plecostomus, *Peckoltia vittata*, is placed with the words for Spotted Sailfin Plecostomus, *Pterygoplichthys gibbiceps*, and vice versa.

I find this book easy to read and quite authoritative, with a broad but comprehensive introduction to a variety of catfish species from South America.

Book Review: The Conscientious Marine Aquarist

Andrew Blumhagen

The Conscientious Marine Aquarist

By Robert Fenner

Microcosm Ltd.

ISBN 1-890087-02-5

Has this ever happened to you? You're in your favorite aquarium store looking for a new sponge filter, or perhaps contemplating a pair of exotic cichlids when it starts. First, a glance over your shoulder. Then, a longer look at other customers in *that* section. Finally you find yourself sucked into the *marine aisle*, gazing at the vibrantly colored fish, bizarre invertebrates, or even a *Tridacna* clam. A shuddering feeling of disgust, or even guilt, jolts you from your transfexion and you quickly make your transaction and head for the car all the while looking about nervously to make sure that no one you know saw you. Well, it's OK, and you are not alone. The Conscientious Marine Aquarist is a beginning on the long road of recovery from marineaquariaphobia.

The Conscientious Marine Aquarist is a book for beginners in the wonderful world of marine aquaria. Many people have preconceptions about marine fish tanks, feeling that they're too expensive, too large, too complex, too difficult to maintain, too destructive to natural environments, or that the fish simply won't stay alive. These and other myths are dispelled in the book, which offers instructions and advice on how to be successful with a saltwater aquarium in simple, clear language.

You will find that The Conscientious Marine Aquarist is organized much like beginners' freshwater aquaria books, starting with sections on equipment, systems, and water chemistry. Later the book moves towards fish and invertebrate health, feeding and maintenance. Finally are descriptions of the fish and invertebrates, organized by family. Throughout the book, there are attractive, accurately labeled photographs and helpful illustrations to support the text.

There are a couple of things that make this book stand out among others. A broad range of aquarium systems are described, including a small and inexpensive twenty gallon system that supports a light fish load and a number of hardy invertebrates like feather-duster worms and common cleaner shrimp. Also discussed is a fifty-five gallon fish-only system. Of course, the challenging micro-reef systems are included as well. Remarkably, these systems are not only described for starters, but each are advanced from a relatively simple beginner's tank to more complex systems as the hobbyist gains experience.

The fish and invertebrates sections are particularly well and aptly written. A description of each family of commonly kept specimens precedes the actual species descriptions. Most individual species are described but briefly, with longer descriptions reserved for those animals which are especially good choices or, more importantly, especially poor choices. There are a number of charts which outline which species in a family are good and bad selections, including the

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Shippers Take Note

Excerpt from and comment on an e-mail by George Libby, NAFBG

It may be time to revise the "Shipping Tips" that we periodically print in the newsletter (NAFBG). For those that don't receive the killietalk-digest mailing list, there was a post about live delivery guarantees and Priority Mail. I had experienced the problem a couple of times and did alert Dan Nielsen (AKA Fish & Egg Listing Chairman) about it. It was looked into and found to be accurate, so the AKA will be revising their live delivery guarantee and shipping rates/methods to reflect it.

What is this problem? Simply that the Post Office no longer (over a year now) is the handler for Priority Mail. They do take in packages and deliver them, but the actual transport between destinations is handled by Emory Air Freight. When the Post Office handled Priority Mail, it traveled in heated, pressurized cargo holds on regular commercial flights. However, Emory ships in unheated, unpressurized holds. The end result is that temperatures drop (it is VERY cold at 30,000 feet!) and temperatures of the package contents drop as well. There have been a number of DOA shipments caused by this. I have had several shipments myself that I sent to people that were 100% DOA and lost well over \$150 worth of fish that way. The shipments were made in warm weather on this end (60 F or better) and were sent to warmer destinations (in one case 95 F), yet all fish were DOA and the water was near freezing. Express Mail is still handled by the Post Office and uses heated, pressurized holds.

Reprinted from Some Things Fishy, Newsletter of the Tropical Fish Club of Erie County, July 1999 issue.

I recently came upon the above article and wanted to share it with the rest of PVAS since I know many of you ship fish. This is the first that I have heard of this. I have been shipping fish via Priority Mail for many years and have NEVER had a problem of any kind with it. Although I don't ship nearly as much as I used to, I have sent a number of shipments out during the past year, winter and summer, and as I stated above have never had a problem. If anyone else has been shipping via Priority Mail, please share your experiences with the rest of us by dropping me a note or talking to me at a meeting (I'm working on e-mail but don't have it up and running at the time I'm writing this) and I'll use your input to write a short article for Delta Tale.

John Mangan

Apistogramma iniridae

Don Kinyon

This is an *Apistogramma* from Columbia that is rarely seen in the hobby, and though it lacks some of the bright coloration of some others and may be a little temperamental to keep, I think that it is well worth the trouble. It makes up for its subdued coloring with exceptional parenting and, in the case of the males, a magnificent high dorsal fin.

I was lucky enough to acquire a pair through a business venture. I housed them in their own twenty gallon long bare-bottom tank, with a lot of bog wood and oak leaves for cover. There were also several clay pots for spawning sites. The water was tea colored, very soft and very acidic, under 1° hardness on the German scale and under 5.5 pH. Filtration was a simple sponge filter and the temperature was 78°F. They got a water change of about 30% once a week.

Feeding was not a problem, as they would take anything offered. They got a variety of live, frozen and freeze-dried foods and would even take flake food.

The display of the male when courting is something that must be seen to be appreciated. His dorsal fin seems twice the height of some other Apistos.

Soon after they were settled, I noticed that the female was bright yellow and was guarding one of the pots. In a few days, she was leading about a dozen fry around the tank. For fear of losing the male (he was bullied into a corner at this point and not getting much to eat), I removed him and put him into a tank with some other male Apistos in the same situation.

The babies were no problem to feed, either. They ate microworms at first and newly hatched brine shrimp soon after. The young grew at a surprising rate; at one month they were 3/8" and by two months almost 3/4". The brood had dwindled to six by the two month mark, which could have been one reason for the accelerated growth.

I was later able to raise a larger brood by removing the male shortly after the spawning and making sure that the mother was very well fed during the period of fry care. The young seem a little more delicate than other *Apistogramma*, but once they are past two or three months, no special care is needed.

Even though the colors aren't as bold as some more popular fish, these beautiful dwarf cichlids are without a doubt on the "favorite fish" lists of many hobbyists and breeders as well.

Apistogramma nijsseni

Francine Bethea

When I first decided to start this hobby last year, my intent was clear. I wanted to raise and breed South American dwarf cichlids. My species of choice was the *Apistogramma nijsseni*. I read most information available and badgered the LFS manager with many, many questions.

In the beginning I was disheartened to learn that my water, which is off a well, was measuring at a pH of 7.6 and a general hardness of liquid rock. These were certainly not the proper parameters for dwarf cichlids. I should have stopped there and looked into African cichlids.

Although my tank was set up and already running with a few fish for dithers, I immediately ran out and bought a bale of Canadian Spagnum Peat Moss. I bought a charcoal pack for that filter and dumped out the contents and replaced it with peat. I placed the bag on top of the sponge in the canister. After a few days the pH measured at 6.5 and the general hardness was at 4. A few days later, the pH stabilized at 5.0.

Finally, it was time to purchase the Nijsseni. Ouch. But I was determined and took them home. Before putting the fish into the tank, I acclimated them to my water for an hour. Once in the tank, the fish began to forage for food. I took this as a good sign.

As the LFS guy had mentioned, these fish were wild caught. So I was determined to recreate their natural biotope. In this 30 gal tank, I began with a large piece of driftwood, small round stones and layers of slate scattered haphazardly. I strategically placed clumps of Java Moss and Fern with a bunch or two of *Ludwigia repens*, *Hygrophilia polysperma*, *Hygrophilia difformis*, *Sagittaria subulata*, *Echinodorus tenellus* and dwarf *Vallisneria spiralis* to create open areas and thickets.

In the meantime, I changed the diet of the fish to live and frozen shrimp. 25% water changes were done with distilled water. Ouch. But as I have said, I was determined.

The fish colored up nicely and began to court. The male began cleaning a depression in the driftwood that was very visible. There was Java Moss growing around the site, but I still got a clear view. Within a few days there were rows of oblong red eggs hanging from the curve of the depression.

Once the eggs hatched, the wrigglers were being protected vigilantly by the female. The male protected the area around the driftwood. I had removed the other fish that I used as dithers and left the *Otocinclus* to take the brunt of their attacks.

I did not see the fry much when they became free swimming. However, as they began to appear, their numbers were reduced. Once they got older, they began to eat the frozen and live shrimp that fell to the substrate. Usually the shrimp were much larger, but the fry would go at them anyway.

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Apistogramma panduro

Don Kinyon

For the longest time there were stories and magazine articles about the *Apistogramma pandurini* from somewhere in or around Peru. The ACA even had a small article in its journal about the fish. All the pictures I was able to find, including the ones in the article, showed a washed-out tattered specimen that, other than for curiosity, wouldn't make you want the fish in your tanks.

Until I had a chance to see the live fish in a setting that was comfortable for them, they held little attraction.

I was able to get access to a group of young fish, a greater portion of them males, and housed them in a fifty gallon breeder tank. After a couple of weeks, when the fish were at home, I picked out my pair for breeding and housed them in a fifteen gallon of their own and slowly changed over their water to all rain water, while the remaining fish were in a little harder water with a pH of 7.6. The pair was fed on mostly live and frozen foods, along with some freeze-dried and dry prepared foods. In about a week, the fish spawned; not the breeders in the fifteen gallon, but a pair that was still in the fifty breeder. These fish had been fed some live and frozen foods, but much more dry and freeze-dried.

Because of the large number of fish in the fifty, many of them *Corydoras* species, it was too much of a gamble to let the parent fish raise the brood. The flower pot with the eggs was placed into a one gallon bowl filled with water from the breeding tank and a little acriflavin to keep the fungus down. Then slowly over the next week, I replaced the water with rain water. In two days at 77°F, the eggs hatched, and in seven more the young were swimming on their own.

The fry ate freshly hatched brine shrimp as a first food, along with vinegar eels and microworms. Half the water in the small tank was replaced every day to keep the tank fresh. In a little over a week, the young were moved to a seven gallon tank with the same water, fed on the same small live foods until they were five weeks old. I was able to cut down the water changes to every second day. By this time, the young fish were 3/8" long and had to once again be moved.

I split the young into a ten gallon and a twenty long tank. The fry numbered about fifty, so they were still a little crowded, but responded well to the extra room. I started feeding them the same foods as the adult fish: assorted chopped worms, frozen adult brine shrimp, and prepared dry foods. They ate heartily and grew well with twice weekly water changes, and at two months the bigger fish were over one half inch.

As much press as these fish get, I think they will catch on in the hobby in a big way. I hope so.

Badis badis

Don Kinyon

One of the fish that's been around the hobby for years and years is the Nandid from India, the *Badis badis*. It's sometimes called the Chameleon Fish, for reasons that become obvious once you observe them for a while. The fish seem to change color according to mood, especially during courtship and breeding.

Most of the time, they are a mildly colorful series of stripes of orange and blue, sometimes violet. However, when guarding a nest or group of young, the male becomes jet black with bright blue highlights in the fins.

I located six young fish through the internet, and through favors from friends, was able to get them home. They were 1 1/4" to 1 1/2" long, and seemed no worse for wear. I was told that there were three of each sex, but they looked all the same to me.

Their new home consisted of a 40 gallon tank and their tankmates were some croaking gouramis that arrived at the same time. Eventually, six *Corydoras* catfish also shared the space.

Nothing special was done to the water or filtration; tap water of 7.4 pH and three large sponge filters. There was no heater, so the water stayed at about 74 degrees. Some locust bogwood, inverted clay pots, Java Fern and Java Moss completed the setup. There was no sand or gravel in the tank.

The fish ate well from the start, always preferring live food but accepting frozen and even freeze-dried foods. Live foods were white worms, earth worms (chopped) and mosquito larvae. They got one of these each day, when possible. Water changes of about 30% were given every week.

In a few weeks, I noticed one of the males (by this time, it looked like the breeder was right; there were three pairs) acting strangely during a water change. He not only attacked the siphon, he had changed color. He was an absolutely beautiful black, with bright blue in the fins. Without thinking, I lifted the flower pot he was guarding to see if there were eggs inside. As soon as it was off the floor of the tank, about a hundred babies scattered.

Figuring that I'd done enough harm for the day, I put the pot back and let the father go about gathering the youngsters back up.

He must have done a good job, because the next day there were still many young in the pot. I left the other fish in the tank until the male no longer seemed to have control of the babies, about three weeks' time.

After the adult fish were all removed, the babies were more at ease and ventured out of pot and plants more often. They hung on the algae-covered sides of the tank most of the time, possibly

Continued on page 23

Pearl Danio, *Brachydanio albolineatus* (Blyth, 1860)

R. Shane Linder

The Pearl Danio is, to me, the prettiest of all common, small Danios. The fish is an overall blue-silver with a reflective pinkish-red mid-lateral stripe that runs from just behind the belly to the caudal peduncle. This fish is fairly common in pet stores, and can be purchased at very reasonable prices. The Pearl Danio has a wide distribution from India throughout Southeast Asia. The fish is fine in temperatures from 68 F to 80 F and will thrive in almost any water chemistry, provided great extremes are avoided. Like most Danios, the fish spends its days dashing about at the water surface and ignores other tankmates and plants. All in all, a very community tank-friendly fish.

I placed two males and three females in a 20 gallon tank to condition them. All five fish were 1.5" to 1.75" long, which is not quite full-grown. The fish were fed mainly dry foods with frozen foods 2-3 times per week. The conditioning tank was unheated and the temperature stayed around 72 F, the pH was 7.6, and the general hardness was at 150 ppm. On the evening of 14 January 1999, all five fish were transferred to a ten gallon spawning tank. The tank was filled halfway and contained lots of Java Moss and a sponge filter. The tank's chemistry was pH 6.8, temperature 80 F, and the hardness was 40 ppm. The fish spawned through the early morning and were removed at noon on 15 January. I did not witness the actual spawning.

The fry started hatching after about 60 hours, however they lay on the bottom, absorbing their yolk sac for 4-5 days. First foods were Liquifry and what I call "sponge food". Basically, once or twice a day, I grab a sponge from another sponge filter in my fish room and squeeze the sponge into the fry tank. The fry attack the cloud, eating all the tiny organisms dislodged from the sponge.

After about a week, I got around to hatching some brine shrimp and fed these to the fry along with Tetra Bits, dry food smashed into a paste with a mortar and pestle. The fry have grown quickly, and one month later are basically clear, with a pink stripe running from the eye to the caudal. The largest fry are almost a half inch while the smaller fry are about a quarter inch. As the fry grew, they were spread between two 10 gallons, a 20 long and a 5 gallon tank. Admittedly, with this many fry, I have not been very diligent about their care as I could not possibly care for this many fry. My best guess, though, is that, despite my inattention, I have about 200 to 300 fry between all four tanks. I plan to keep about 50 and place the large school in my 55 gallon display tank. It should be quite a sight.

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Don Kinyon

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R. Shane Linder

The Pearl Danio is, to me, the prettiest of all common, small Danios. The fish is an overall blue-silver with a reflective pinkish-red mid-lateral stripe that runs from just behind the belly to the caudal peduncle. This fish is fairly common in pet stores, and can be purchased at very reasonable prices. The Pearl Danio has a wide distribution from India throughout Southeast Asia. The fish is fine in temperatures from 68 F to 80 F and will thrive in almost any water chemistry, provided great extremes are avoided. Like most Danios, the fish spends its days dashing about at the water surface and ignores other tankmates and plants. All in all, a very community tank-friendly fish.

I placed two males and three females in a 20 gallon tank to condition them. All five fish were 1.5" to 1.75" long, which is not quite full-grown. The fish were fed mainly dry foods with frozen foods 2-3 times per week. The conditioning tank was unheated and the temperature stayed around 72 F, the pH was 7.6, and the general hardness was at 150 ppm. On the evening of 14 January 1999, all five fish were transferred to a ten gallon spawning tank. The tank was filled halfway and contained lots of Java Moss and a sponge filter. The tank's chemistry was pH 6.8, temperature 80 F, and the hardness was 40 ppm. The fish spawned through the early morning and were removed at noon on 15 January. I did not witness the actual spawning.

The fry started hatching after about 60 hours, however they lay on the bottom, absorbing their yolk sac for 4-5 days. First foods were Liquifry and what I call "sponge food". Basically, once or twice a day, I grab a sponge from another sponge filter in my fish room and squeeze the sponge into the fry tank. The fry attack the cloud, eating all the tiny organisms dislodged from the sponge.

After about a week, I got around to hatching some brine shrimp and fed these to the fry along with Tetra Bits, dry food smashed into a paste with a mortar and pestle. The fry have grown quickly, and one month later are basically clear, with a pink stripe running from the eye to the caudal. The largest fry are almost a half inch while the smaller fry are about a quarter inch. As the fry grew, they were spread between two 10 gallons, a 20 long and a 5 gallon tank. Admittedly, with this many fry, I have not been very diligent about their care as I could not possibly care for this many fry. My best guess, though, is that, despite my inattention, I have about 200 to 300 fry between all four tanks. I plan to keep about 50 and place the large school in my 55 gallon display tank. It should be quite a sight.

Leopard Danio; *Brachydanio frankei* (Meinken, 1963)

R. Shane Linder

The Leopard Danio is one of the most common Danios found in pet stores. The fish is an overall metallic gold with blue-grey spots along the flanks. The scientific status of the Leopard Danio has been in question for many years. Some experts wonder if the fish is a true species or just a form of the Zebra Danio, *Brachydanio rerio* (Hamilton, 1822). The debate over the validity of this species has been in the aquarium literature for years. It would certainly be a worthwhile research project for an aquarist to look through the scientific and aquarium literature and put this debate to rest.

The Leopard Danio is a pretty fish that grows to just over 2" in length. The fish does not harm plants and gets along fine with just about any tankmate. The fish school about the upper waters, which is nice because close to the light, their gold bodies are very reflective and make a nice display.

I conditioned five fish, one male and four females, in a ten gallon tank for two weeks. The tank was at 78 F, pH 7.6, and had a general hardness of 140 ppm. The fish were fed Tetra Bits, frozen brine shrimp and frozen blood worms. The male and the two most gravid females were then moved to a 5 gallon tank for spawning. The spawning tank had a sponge filter, lots of Java Moss, and a substrate of dark marbles. The marbles trap the eggs and keep the ever-hungry parents from consuming them. With the marble substrate, it is possible to breed the fish in the same tank for up to a week. This is because even after the fry hatch, they lay at the bottom for four to five days, absorbing the yolk sac, and remain protected by the marbles. The spawning tank was a mixture of 70% rainwater and 30% tap water. The temperature was 82 F, pH 6.8, and general hardness 60 ppm.

The parents were placed in the spawning tank 17 January 1999 in the evening and removed the following night. After hatching, the fry were separated among a 20 long and a 10 gallon tank. The fry survival rate was not very high, because these tanks already held Pearl Danio fry that were two days older. I believe the Pearl Danio fry outcompeted all but the toughest Leopard Danio fry. Now, almost one month later, the Leopard Danio fry are all about 1/4" long. They were raised mainly on Liquifry and smashed-up dry food with occasional live baby brine shrimp. At their current size, the fish are very pretty. The body is still clear, but the eye reflects a brilliant blue reminiscent of the Neon Tetra. One interesting observation is that for the first two to three weeks, the fish only feed at the surface. After this time, they search all levels of the tank for food. I have noticed quite a growth spurt in conjunction with their new method of searching for food. Although their older cousins, the Pearl Danios, certainly ate most of the food offered, I would estimate that after one month, I have nearly 100 fry.

Corydoras oiapoquensis

Don Kinyon

This small *Corydoras* is named for the river it is native to, the Oyapock in French Guiana. Unfortunately, it's not a common find in pet shops, but may be more so in the future if more hobbyists take the time to breed them.

Corydoras oiapoquensis is very similar in size and coloration to *Corydoras panda*, but lacks the caudal peduncle spot, and makes up for it with a series of wavy stripes on the tail.

I was lucky enough to acquire some of these little catfish from a private breeder at a national fish show. I knew very little about them, as I'd never seen them before, save in books, so I bought his last five. They were about 3/4" long, and seemed very healthy.

Soon after they got into their new home, a 20 gallon long, they started to spawn. I tried various methods of raising the fry, all with some success, but none with great success. I won't go into the failures, which were many, but I'll explain the two most successful.

The first method that I had luck with was removing the eggs to a separate hatching tank. I set up a 3 gallon tank with water from the breeding tank (well water of medium hardness, pH of 7.4, and room temperature of 70-75. I'd scrape the eggs off the glass with a razor blade (or a finger works as well) and put them into the smaller tank to hatch. The eggs that were in the gravel would come out when the gravel was washed at water changes, and the eggs in the plants had to be taken out by hand (this is a tedious job, but if you have kids, get them involved; they seem to enjoy it!)

I had the most luck with this method using a lot of current in the hatching tank. I used an air-driven sponge filter at one end, along with an outside filter and a power head attached to another sponge at the other, with the aeration turned to full. The end result looked something like a brine shrimp hatchery turned on its side. With any less water movement, most of the young would die soon after hatching. Even with all the filtration and water changes twice a day, many of the fry were lost.

The final method that I tried, and the one that I still use, is the "less is more" approach that seems to work for me in more cases than not. It seems that if I can fight the urge to meddle in the lives of the fish, they reward me with more young than if I'm constantly "helping".

I leave the parents, young fish, fry, and eggs in the same 20 gallon tank with the same water described above. There is standard aquarium gravel at 2" depth, many larger stones for the smaller fish to hide under, and some bog wood with Java Moss attached. The fish are kept very well fed, and 30% water changes are done twice weekly. The temperature in the tank ranges from 70 degrees to 78, and spawning usually takes place at the lower temperatures, most often after a water change.

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Corydoras sp. "Peru Green"

Don Kinyon

Once again, the fish outsmarted me.

I tried everything. I read all the books and the magazine articles. I talked to *Corydoras* people.

I set the ten gallon tank up in a cool room with some natural sunlight.

It didn't work.

Someone in a magazine said to put the heater on a timer, so the temperature was higher during the day and fell at night. I tried it.

It didn't work.

One of the books said that if you lower the pH of the water with water changes, even "difficult" Corys would spawn. So I did water changes daily with rain water and brought the pH down.

It didn't work.

Some experienced *Corydoras* people said that some species needed very subdued light to get them into condition. So I blocked off the sides of the tank and put a weak light on a timer for a short period each day.

It didn't work.

So, I thought, maybe using all these methods together would do the trick.

It didn't.

Finally, I gave up. Even though these are some of the most colorful catfish I'd ever seen, I had to admit defeat. I put them in a ten gallon tank in my fish room with some bog wood, Java Moss, and tap water, and figured I'd just enjoy them for as long as they lasted.

Within a week, they spawned. It may have just been their way of saying, "Thanks for finally leaving us alone."

There were about a hundred eggs on the glass, plants, and floor of the tank. The parents didn't seem interested in them, but I thought it best to remove the eggs to a separate tank for hatching. Some of the eggs were infertile, but about seventy young hatched in eight days.

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Julidochromis marlieri

Gene Moy

Members of the genus *Julidochromis* are torpedo-shaped small cichlids from Lake Tanganyika. *Julidochromis marlieri* has been available in the hobby for some time. These fish have a base color of yellow with horizontal splotchy black stripes running from head to tail.

I picked up a pair of these beautiful cichlids at one of the auctions, despite not having much room for them in my tanks. The larger fish is 2.0" in length, while the smaller fish is 1.7". In they go to a 5.5 gallon tank. Three tablespoons of kosher salt and one tablespoon of epsom salt is added to the water. Water changes are performed using a "Water Changer" every six weeks.

The cichlids grow slowly, but seem to take well to their surroundings. These Julies are shy and stay behind rocks in the back of the tank and only dash out for food if they feel no one is looking. I feed the pair primarily flakes with an occasional treat of live brine shrimp.

After recently thinning out my tanks, I am considering moving the pair to larger quarters. Peering into the tank, I notice greenish eggs stuck to silicone sealant along the bottom of the aquarium. The eggs are scattered and not grouped together as I would expect. Closer examination reveals another small group of eggs inside the base of a plastic plant. The dozen or so eggs are a bluish-green, about 1.3mm (1/16"), ovoids. I believe that the smaller fish is the female, but am not certain of this since I did not witness the spawning. I decide to keep the pair in their existing tight quarters.

I do not see the young for several weeks after the spawning. About a month later, I do see several young, 5mm long fry taking up position on or near a large rock away from the parents. I would have to believe that these are from a different spawn, as I judge them to be only about one week old. After removing the parents to larger quarters, I discover a total of 18 fry.

Since I am moving fish around anyway, I remove the parents to larger quarters, keeping the young in the 5.5 gallon tank. To better take care of the young, I remove most of the rock work. The young are not as shy as the parents and readily accept small morsels of food ranging from newly-hatched brine shrimp to commercial fry foods. After two months, the 13 remaining young are approximately 20mm long.

Julidochromis marlieri are shy fish like another member of the genus, *Julidochromis transcriptus*, which I also keep. Provide them with plenty of rock work. Check with your source of the fish on whether they were kept with salt and set up your tank accordingly. To breed these fish, it is best to keep them by themselves in their own tank. The minimum tank size should be a 15 gallon aquarium and not the 5.5 gallon that I subjected my breeders to.

Pelvicachromis taeniatus "Dehane"

Francine Bethea

While cruising through an LFS, I spied a lovely pair of fish. They looked like Kribensis to me. I asked the manager why they were so expensive. His reply was because they are *Pelvicachromis taeniatus* "Dehane". Well then. That made the difference.

The natural habitat of these fish consist of small water courses inundated with plants and roots. Further reading mentioned that these fish are capable of keeping and breeding in water with a pH value of between 5 and 7.5. Also, the total hardness should not be above 5 degrees. Naturally this is where I began.

Nevertheless, the tank I setup for the Taeniatus was a 20 gal long. First I seeded the tank with a partial water change from the 30 gal above it. Then I topped it off with 10 gals of distilled water. I set the temperature at 78 degrees. I already knew that the water parameters would be as all my tanks are; pH 5.0, GH < 4. Regardless, I checked to be sure. Whenever I seed a new tank I also make sure that my ammonia and nitrite levels are nil.

The aquascape consisted of a large driftwood piece, a slate pile, and a halved coconut shell. I planted an Amazon Sword, tons of Java Fern, a little of the Java Moss, Riccia and added a sprinkle of Duckweed. My intent here was to allow the Duckweed and the Riccia to spread to form a canopy. With the lights so close to the surface and a low turbulence at the surface, this worked perfectly. The back glass was then covered with dark colored mat paper. I strongly believe in recreating the natural habitat of a species I intend to keep. Although, I must say, when it is time to catch fish, this biotope can be a bit of a challenge.

I used a mini canister filter with two bio sponges. I also attached a sponge on the intake tube. By doing this, I have a sponge laden with bacteria ready to go for another tank. Also, the sponge prevents large debris from clogging the intake and also from sucking up hapless fry. The current was relatively nonexistent.

At first, the Taeniatus were very shy and hid a lot. I decided to add a few dithers. I had a few Glowlight Tetras that had been exiled from an Apisto tank. Then I purchased a few Bronze Corydoras for substrate maintenance. The addition of these fish seemed to make the Taeniatus less shy.

Two weeks had passed and during the second week, the female had disappeared. Not having my wits about me, I checked the carpet under the tank and gave the cat a wary eye. However, this was not the case. I checked the tank more thoroughly and found the female under the slate pile. Carefully, I lifted the top slab. To my surprise there were 30 or so white, oblong shaped eggs adhered to the slate.

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BAP Corner

Standings:

Gerry Hoffman	905 ****	Breeders Award *
Don Kinyon	575 ****	Intermediate Breeder **
Jeffrey Burke	445 ***	Advanced Breeder ***
Lorne Williams	220 **	Master Breeder ****
Gene Moy	210 **	Grand Master Breeder *****
John Mangan	165 **	
Shane Linder	85 *	
Dave Snell	75 *	
Dov Goldstein	55 *	
Francine Bethea	45	

Recent activity: Don Kinyon receives 20 points for *Corydoras oiapoquensis* and 20 points for *Corydoras* sp. "Peru Green" (Lazer Green Cory). Gene Moy receives 15 points for *Neolamprologus* "daffodil". Lorne Williams receives 15 points for *Julidochromis transcriptus* "Gombi", 10 points for *Haplochromis* sp. "Rock Kribensis", 10 points for *Aequidens pulcher*, 10 points for *Copadichromis chrysonotus*, 10 points for *Labidochromis* sp. "Mbamba", and 10 points for *Cyanotilapia afra* "Wakih". Dov Goldstein receives 10 points for *Pseudocrenilabrus philander* (Dispersus Red), 10 points for *Haplochromis* sp. "Rock Krib", 15 points for *Neolamprologus leleupi*, 10 points for *Pseudochromis demasoni*, and 10 points for *Haplochromis* sp. "Fire". This brings Dov to the Breeder's Award level. Francine Bethea receives 15 points for *Apistogramma cacatuoides*, 15 points for *Apistogramma nijsseni*, and 15 points for *Pelvicachromis taeniatus* "Dehane". **Notice:** To be counted towards receiving an award certificate this year, forms must be complete and in John Mangan's hands no later than December 10.

BAP Checkers:

Annandale/Falls Church area:	Jeff Burke	(703) 941-3230
Centreville/Chantilly/Manassas area:	David Snell	(703) 968-9084
Centreville:	Michael Cardaci	(703) 222-3833
Frederick:	Dov Goldstein	(301) 694-7582
Montgomery County:	Ray Hughes	(301) 424-3531
Montgomery County:	Wayne Considine	(301) 977-5973
Mt. Vernon/Olde Town area:	Gene Moy	(703) 765-0865
Oakton/Vienna area:	Rick McKay	(703) 281-1647
Occoquan/Lake Ridge area:	John Mangan	(703) 491-4980
Prince George's County:	Lorne E. Williams	(301) 630-7674
Springfield/Franconia area:	Pete Thrift	(703) 971-0594
Warrenton/Manassas area:	Gerry Hoffman	(540) 347-7486

We still could use some more checkers. There are a number of areas where we don't have anyone. Even if there is someone already listed for your area we could always use someone else to help spread the work around.

Cloudy Water

John Mangan

Ideally, aquarium water should be clear and colorless (which are not the same thing) and free of suspended solids. There are a number of things that can prevent this ideal from being achieved and/or cause its deterioration.

The first, and easiest to remedy if done right, is "new tank cloudiness". This is the milky cloudiness that often occurs within a few days of a tank being newly set up. This is caused by a bacterial bloom in the water. You'll notice above that I said this is the easiest to remedy if done right. The right way is to do absolutely nothing. The bacteria will bloom, use up all of the available nutrients in the water, and then die back within a few days to a "normal" number, which will not be visible. Most of them will be down among the substrate and everything will be fine.

Unfortunately, most people can't just sit back and do nothing. They have to mess around with their tank and in the process, create more work and be less successful than if they just keep their darn hands off the thing. As the saying goes, "if it ain't broke, don't fix it". The solution most people try is to totally drain down the tank and start all over, which just starts the bacterial cycle all over. Theoretically, you could go around in circles like this forever.

The next type of cloudiness is caused by decaying organic matter (yuck). This can be broken down into three main subgroups. The most common is excess food. This will usually cause a grayish or brown cloudiness, and often a foul smell too. Most fish will act like they're starving to death every time they see their gullible keeper come near the tank. Novice aquarists always seem to fall for this, as do many more advanced aquarists that should know better. This type of cloudiness isn't as easy to get rid of as the first type. The first thing is to cut back on your feedings, both number and amount of food given. It is very rare for a healthy fish to starve to death, so don't fall for their begging. If the water is in real bad shape and cutting back on food isn't enough to clear it, then try making a 1/4 to 1/3 water change and cleaning the filter. Be sure to treat the new water to remove chlorine or chloramine and check pH and temperature. It is also a good idea to stir up the gravel before making the water change since if the water is cloudy, then the gravel is probably pretty dirty too. If the tank is in really bad shape, you may have to break the whole thing down and clean everything. This is a last resort, however. A complete breakdown, besides being a lot of work and mess, is a big strain on the fish and you will very likely lose some. Never completely break down a tank unless there is no other choice.

The next subgroup is dead fish (or snails, or crabs...). When you notice your water getting cloudy, do a quick inventory of your fish, etc. If someone is missing, start looking for the body. It will probably not be in plain sight, or you should have noticed it before the tank began to cloud. You've probably heard of the elephant's graveyard, where all of the elephants go off to die; well, there's a fishes' graveyard, too. It's located in the most hidden and inaccessible part of your tank. Often, when a fish is sick or very weak, it will find some well-hidden place to wedge itself into so that the other fishes can't pick on it. This is where it will end up dying. To get rid of the

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cloudiness, first find the body, or what's left of it, and remove it from the tank. Put it in the trash or out in the garden (they make very good fertilizer). Don't flush it! If you do, there is always a chance that you will be introducing some exotic disease or parasite into the environment that can affect the local fishes. Never flush a fish, dead or alive. Next change the filter, especially the carbon. Use a good grade of carbon, such as Marineland or something comparable. Using a good carbon will also prevent discoloring of the water. In most cases, this will be enough to clear the water. If it isn't, then change part of the water and add some extra aeration.

Dead plants can also cause cloudy water. These are usually more obvious than dead fish and if you have much common sense, they will be removed from the tank before they create a problem. If not, the solution is the same as for dead fish (see above). Give your plants plenty of good quality light (full spectrum bulbs preferably) and you shouldn't have a problem.

The next type of cloudiness is greenish cloudiness. This is due to algae in the water (all of the above types are due mainly to bacteria). This problem is caused by an excess of organic matter (excess food, dead fish, etc.) and/or too much light. Changing part of the water and adding algaecides are temporary solutions. To permanently solve it, you must go to the root of the problem. Add more live plants to your tank. Live plants do not cause algae as many people mistakenly seem to think. They will actually reduce the algae by competing with it for the available nutrients. If this doesn't help, then first cut back on feeding to reduce the excess nutrients in the water that the algae is feeding on. If you're still having problems after trying the above, then reduce the amount of light that the tank is receiving. Is it getting a lot of light from a window? If so, either close the curtains during the afternoon or move the tank. Direct sunlight, besides causing algae, is also dangerous for a small tank. The sunlight will cause the water to heat rapidly and then, after the sun goes down, the temperature will drop rapidly. This will lead to the second subtype of decaying organic matter (i.e., dead fish). If the tank is not getting too much sunlight, then it must be getting too much artificial light. Do not leave your lights on 24 hours a day. The sun does not shine on the Amazon river, or any other place where aquarium fishes come from, 24 hours a day. The fish and plants need a dark period. While I'm on the subject of leaving the light on—do not use the light as a heater! Besides giving you an algae problem, you can't regulate the temperature. It will jump up and down as you turn the light on and off. Don't be a cheapskate. Buy a heater. They aren't very expensive, and they use a lot less electricity than the light does.

In conclusion, there are two basic rules that will make aquarium keeping much easier for you:

- 1) As mentioned above—"if it ain't broken, don't fix it".
- 2) "An ounce of prevention is worth a pound of cure", i.e., don't overfeed, look at your tank often, and well enough to notice if there is a fish missing, make regular partial water changes (see the October Delta Tale), etc.

Follow these rules and use a little common sense, and you will be much more successful and have clear water.

This article first appeared in Delta Tale Volume 16, Number 12 (December 1985).

***Colisa lalia*: The Dwarf Gourami**

Bob Roser

There are a number of different color morphs of the *Colisa lalia*, the Dwarf Gourami, which have come into my possession. I'm sure there are many more. I have had three different sets—the regular Dwarf Gourami with its red and blue male, the Flame Gourami with its nearly all red male, and the Neon Gourami whose male is mostly blue in color. The females of all the varieties are a silver-gray color.

I purchased a pair of the Flame Gouramis from a local pet shop with the object of trying to breed them. I set up a 5 1/2 gallon tank with some floating plants and a sponge filter (unconnected so as not to disturb the soon-to-be-built bubble nest). The water level was put at six inches and a jar filled with water and a heater was placed in one corner.

The temperature was 78° and the pH 6.8. A water softener packet was placed in the tank. I placed both the male and the female in the tank together. They were fed on live brine shrimp, black worms and a special breeding conditioner flake food. The temperature was gradually raised over a period of a week to 82°.

After a week, the bubble nest typical of anabantids was built among the floating plants. It was not as large as the ones built by Bettas or even the one built by my Honey Gouramis (*Colisa chuna*), a much smaller fish.

After mating comes the trick of getting the female out of the tank without destroying the bubble nest. The male was left until the fry were free swimming, about four days later.

The fry were small, about the size of a comma. They seemed to be doing well on a diet of Liquifry, egg yolk, and the natural infusoria of the sponge filter. Frequent partial water changes were made to make sure the Liquifry and egg yolk did not foul the water. Small amounts of water were removed from the bottom with a kitchen baster and squirted into a small white plastic cup. Any fry which were sucked up were put back with an eye dropper.

The fry did well for about a month when disaster struck. My heater went on the fritz and the temperature suddenly shot over 94°. All but six died. To compound this tragedy, the female died in the community tank about the same time. Time to try again! A trip to Creatures and Critters in Woodbridge showed an extra female Flame Gourami which they sold to me as a singleton. Clean out the tank, set up again, condition the water and the breeders and hope for the best.

This time the male built his bubble nest but the female did not appear to want to fool around (déjà vu!). I kept them together for two weeks; several nests were built but I never saw any eggs in them.

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***Limia nigrofasciata*: The Hump-Backed Limia**

John C. Clark

Reprinted from the January, 1999 issue of Gravel Gossip, Official Publication of the Diamond State Aquarium Society, Delaware.

This is one of the old stand-bys. This species is native to the Lake Miragoane region of Haiti. They can be found in fresh as well as brackish waters. In these waters, they are usually found in the shallows and with heavy vegetation.

I think what attracts most people to this species is that it is a pleasant looking fish. The body is stocky in appearance and the head area comes to a modified point. The base color is olive. The males get a golden yellow from the lower jaw line, along their belly to the caudal area. On the body's top in the dorsal region is where the male has the hump, hence the name. This bump grows with the age of the male. The male has a larger dorsal fin, which has stripes and spots. These spots sometimes run together and look like wide stripes.

The female coloration is a little different in some respects. The females' base color is olive, but where the male shows the yellow coloration she shows an off-white color. Her back has no telltale hump as does the male's. While the males have a larger dorsal fin with stripes and spots, the female is very pale yellow, almost clear in color. Both the male and the female have vertical stripes on their sides; the number of these stripes may vary from fish to fish. Both sexes may also have small spots between these vertical stripes. Although similarly colored the males are the stand out in this species. As is with many of the livebearers the female is the larger of the two, the female being 4 to 6cm and the male about 4 to 5cm in length.

I have kept this species in a community tank and they have done very well. But for breeding I placed these fish in their own 15 gal. tank. I had got these fish at an auction and there were 6 fry in the bag. The strain came from Bob Cashin of Erie, F.A. I always like getting livebearers from Bob; they're always 1st class as is Bob. The tank setup was a heavily planted tank, with a piece of driftwood down the middle of the tank. For filtration I used an outside power filter that had the uplift tube adjusted to the full, open position. This would cause the water to be expelled at a higher rate, and thus there would be movement added to the water. This species likes water movement. As far as the temperature, 75 to 79 degrees seems to be the range they liked best. They also like a slightly hard water. In fact it has been my experience that they do not do well in soft water. I usually did a 30% water change about every 10 days, and gave the tank approximately 10 hours of fluorescent light per day. With this tank setup the *Limia* seemed to do very well.

In feeding this fish I used a variety of quality dry foods as well as live foods when available. I try not to feed the same food to them 2 days in a row; as the old saying goes, "variety is the spice of life." In fact these fish are not picky eaters.

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My fry took about 5 months to show signs of full maturity. By this time I had taken out 2 males which left one male and 3 females; this ratio let the females have a bit of breathing room from the single male in the tank.

By 7 months the colony was fully mature and showing signs of breeding activity. The male would come up from behind and below and start to quiver until close enough to try and couple. This was repeated endlessly with one female or another. Sometimes the females would almost sit on the bottom of the tank; when this happened the male would swim up in front of her, start quivering and slowly go backwards until side by side and then try to couple with her. When a male was trying to inseminate a female he would turn upside down to gain the correct angle.

The gestation period for the *Limia nigrofasciata* is 28 days, the fry are small and eat almost immediately. My broods numbered 7 to 9 fry per drop. Now older and larger females are capable of dropping over 50 fry. If your adults are well conditioned and fed well there is no need to remove the fry from the tank. I've had 2 and 3 broods living in the same tank with the parents with no problems at all, but do make sure you are feeding food that is small enough for the fry to eat. Other than that, they are as easily fed as the adults.

Although the word "Limia" means muddy, there is nothing to muddy up the water when it comes to keeping this livebearer. They are attractive, lively, good tankmates. Easy to feed, and they don't eat their young. What more could you ask for in a fish? If you want to try a *Limia*, you could not find a better place to start than the Hump-Backed *Limia*.

A Treatment for Camallanus

Charles H. Harrison

Partial reprint from an article in the January/February 1999 issue of The Darter (Volume 25, No. 1), a publication of the Missouri Aquarium Society.

The first time I saw this parasite was in a Convict cichlid back in 1970. It was a stranger to us then but since that time, I have lost several fish to this parasite. The following article has been written for the Killifish enthusiast, but it certainly applies to all the Tropical Fish Hobby.

Camallanus is an intestinal parasitic infection. This malady is due to a nematode or parasitic worm which is found in wild fresh and salt water fishes throughout the world. The infestation is characterized by, among other things, the presence of tiny red thread structures protruding from the anus of the infected host fish. Close inspection of the victim shows a swollen and irritated vent area. The worms actually protrude 1/3 to 1/2 inch from the anus of the infected fish. This is about one fourth to one third of the worm's length. The worms are red from the victim's blood in their gut.

As with most parasites, there are two main body functions of this worm, reproduction and nourishment. The attachment inside the fish's gut is by what appears to be a simple row of long hooks. Closer examination reveals a burr like structure. Attachment to the intestinal wall causes considerable damage to the host's intestines. The remainder of the body of the worm is dedicated to reproduction. Microscopic larvae from this parasite are constantly being produced and dumped into the water. A secondary host is necessary to carry on the life cycle. But, once established in the copepods found in most of our tanks, the nematode infection is easily transferred from hobbyists' aquarium to aquarium with nets, feeding utensils, water change devices and simple aspiration of splashes and spray from one tank to another. This carries the infection rapidly around the hobbyist's fish room in a matter of days.

The early signs of the parasite's presence are typically unnoticed. The victims show a minor swelling of the belly and may go off their food. Usually the fish have no problems laying eggs until the infection has reached the stage of showing protrusion from the anus. In the end, the anus and reproductive organs of the fish become so irritated and inflamed that secondary infection sets in and the swelling causes enough hemorrhaging to cause the victim to bleed to death or it dies from internal bacterial infection. In addition to this obvious outside appearance, the worm has been found in the body cavity of infected hosts. This may explain some of the mysterious deaths one sees in fishes which have been successfully treated for the nematode. The adult worm has died inside the body cavity and decayed inside the host fish. Sounds gruesome!

We Seem to Have Found a Cure! Ken Laidlaw <kl@iach.hawaii.edu> made a posting on the KILLIE-List a couple of months ago in response to someone who announced that they "had a fish with worms sticking out from its ass."

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Ken said he had used a substance known as levamisole to kill these awful creatures.

I wrote to him and he back to me and we came up with a solution for an infection I have found in some of my fish.

On Thursday, 26 Sep 1996 08:13:48 -430 (EDT) I received this posting: "Hi, Charles, Here as promised is the recipe for Camallanus treatment. 1. Add 1.5 milliliter per 7.5 liter of 7.5% Levacide (levamisole hydrochloride) to each tank to be treated. Mix the drug in a liter of water before pouring over the tank surface. If you obtain another strength of the drug (e.g. 1.5%, 3%) then just adjust dosage as required. For 1.5% add 1 ml in 1.5l of tank water. 2. After 24 hours perform 100% (as much as possible) water change whilst vacuuming the gravel. The water change is not required due to toxicity but to remove the possibility any offspring in the gravel. 3. No further treatments should be necessary. Good luck and please let me know how you get on. Feel free to pass this information to whoever you like. Regards, Ken L"

Well, I went to work to find the medicine. Actually as a chemist, I went to work to find the compound which Ken talked about, and I did. One of our dog friends is a Vet tech, and has been active enough with her group to be able through networking to come up with several large pills (3 grams) about the size of the end of your thumb. The pills weighed 3000 mg each. The activity of each was stated at 185 mg per pill. This didn't sound very logical, but I went on this assumption for dosage in my tanks. One and a half pill per 4 gallons of water. You couldn't see through the tank! Egad; what a mess.

The evening of the next day the worms protruding from a trio of Gularis were over half gone. I netted out one of the females and examined her vent for the pests. The worms fell out into the net. The individual worm was about 1 cm long, red and transparent. The head end was somewhat bigger around than the rest of the body. The gut was red and visible with simple hand lens magnification.

I was elated. These fish had come through a lot and they were some of the nicest Blue Gularis I have had in several years. I really wanted to see them survive. We had success. This was not the first time I had come across this parasite. A couple of years ago I got some fish from a local fish store which had come in with a bunch of plants from Florida. The little fish gave this parasite to my fish room and in a matter of a week, I wound up flushing three 30 gallon tanks of various Tetras and Killies. I am very glad to have found a cure.

The actual story goes like this: There were several bags in a fish shipment to SLAKA. Several specimens showed the outward signs of the parasite. Trevor Meyer and I shared most of the fish of this shipment. Several adults which were stressed by the shipping were showing the effects of the parasite. But, this time we had relief. The Levamisole had done the trick and eliminated the worm completely. I wish I had known of this chemical back when I lost all those C. adloffii and Black Tetras. That was devastating!

Continued from page 21

Back to the story. Trevor was about to flush the victims of this infestation. His specimens were smaller (*A. cognatum* and *fulgens*) and even more stressed than my Blue Gularis and *Deltaense*. I gave him three of those pig pills and told him to:

Crush one of them into as fine a powder as possible and dissolve the powder in a cup of tank water. Add this mess to the 2 1/2 gallon drum bowl the *cognatum* were in. Add some air with an air stone or tubing and feed them with live food.

Change their water after a couple of days and let's see what happens. WELL, the worms vanished! The fish are up eating like crazy and spawning again three days after the treatment. Trevor is happy, the fish are saved, and SLAKA is moving forward saving FISHDOM and the hobby from those awful parasites which hang from their victims' anus and slowly kill them from any number of things. Sounds a bit like some of the politicians I have known!

Since the treatment has worked so well, I decided to get some of this compound in its pure form and keep it around for others as well as myself. A medical chemical company which we deal with sells levamisole hydrochloride in 50 gram containers. I split this up into plastic bags to contain 5 grams each. The treatment dosage is 1.5 ml of a 7.5% solution in 2 gallons of water. If one dissolves one of these five gram packets in 3 ounces of water, that's about a 5% solution. Two milliliters of this 5% solution will treat 2 gallons of tank water. Eighteen to twenty drops makes a milliliter or about one medicine dropper full. One ml per gallon. This provides a 15 milligrams per liter treatment bath.

This 5 gram packet will stay good for at least a year if it is kept dry. The solution is good for 90 days. Five grams will treat 100 gallons of tank water. It is hard to overdose with this chemical. The fish in our study showed no side effects at all. Close examination of the tank water showed no effect on the protozoa or other tank flora either. The only thing which seemed susceptible was the parasites. The broad spectrum anthelmintic action of this chemical makes it a welcome drug in my fish room.

Corydoras oiapoquensis continued from page 10

The adult fish eat a variety of live, frozen, and dry foods, and the young get microworms and baby brine shrimp. All are fed twice daily. At any time, one may look into the tank and find breeding-sized adults, juvenile fish, newly hatched fry, and eggs. As long as the adults are kept well fed, they don't seem to bother the eggs or fry.

I hope this report has encouraged other hobbyists to keep this little catfish. I'm sure anyone who does will find it worth the effort.

butterflyfish and triggerfish families. This, combined with a previous section on selecting healthy livestock, will help you avoid the disastrous experiences which often plague would-be marine aquarists. As a side note, there are a number of species described that are bred in aquaria, including a few mouthbrooding species (that oughta perk up a few ears!). I won't say which ones, you'll have to buy the book to find out.

Some things you will *not* find in The Conscientious Marine Aquarist: It is not intended as a fish atlas which might describe every species found in a fish store, and many which are not. Advanced topics such as fish breeding and coral propagation are touched on only briefly. While it is clear that the author has a grasp of incredibly technical details such as cell biology and the physics of light spectra, these are not discussed in the book as they are probably not useful to the beginner. What you will find is a well-written book that may inspire you to discover, or re-discover, marine aquaria.

The Conscientious Marine Aquarist is available through online ordering services and large chain book stores for around \$40; however, please spend a few extra bucks to support your favorite independently-owned fish or pet store. They will be happy to order it for you if it's not in stock. If you don't support these stores, that pair of exotic cichlids that started this whole mess may not be easily available when they are swallowed by industry giants.

Apistogramma nijsseni continued from page 5

As the fry began to surface for feeding, I removed them to a bare bottomed 2.5 gal with their water and some Java Moss. I also used a hydro sponge for filtration. Their diet then consisted of microworms and frozen bbs. Occasionally, I would throw in a few small white worms.

As they began to grow out, I noticed that the fry grew at varying rates. Usually the larger ones were male. Also there seems to be one alpha male that grew the fastest. So as their size increased, they were moved to a larger tank. By the time they were 2 months or more I was able to sex them.

Once the fry were removed from the breeding tank, the original pair began their courtship again.

Badis badis continued from page 7

feeding, and grew slowly. The young also ate newly hatched brine shrimp and microworms well. At two months old, they are still growing slowly, and eating many of the same foods as the adults.

I would recommend this little fish to anyone who has kept *Apistogramma* or similar fish with any success. Because of the similarities, but also because of the differences. It's a pleasure to keep, and fascinating when displaying breeding behavior.

Corydoras sp. "*Peru Green*" continued from page 11

In about two days, I started giving them some microworms, and that's been their staple since. I gave them newly hatched brine shrimp for a couple of days, but I found several fry dead with distended stomachs. I'm not sure the two are connected, but they do well on microworms, so brine shrimp are no longer in their diet.

At one month, the young were eating fine flake food along with regular feedings of microworms. They started to look more like the adults, but hadn't developed the bright green coloration. At this point, they were moved from the ten gallon hatching tank into a breeder-style 50 gallon. This gave them a lot more room and seriously cut down on my maintenance, as I was changing water in the ten gallon twice a day.

The young fish started growing more quickly in the new tank, but as with most *Corydoras* species, growth was not what one would call rapid. At two months, the fish eat all the same foods as the adults: live, frozen and dry, just more finely ground or chopped. They are just beginning to show the green stripes the parents wear.

The parents are still in the same ten gallon tank with no special treatment, and have rewarded me for leaving them alone with another spawning.

I'm not going to any special trouble for these guys again

Continued from page 13

I ignored the tank except for the weekly 25% water change and the daily feeding. On the seventh day the male *Taeniatus* was parading a swarm of free swimming fry. The fry moved with the male around the tank. Whenever the male dashed off to maintain boundaries, the fry would hunker down atop the substrate.

What puzzled me was that the female was also kept away from the fry. I was led to believe that this species shared the responsibility of rearing. This behavior, whether natural or not, was stressful to me and the other fish in the tank. Therefore, I siphoned the fry into a 2.5 gal. I added some of the Java Moss from the breeding tank. Filtration was taken care of with a hydro sponge. The fry immediately started for the sponge and the java moss. I fed them frozen bbs more than anything else. *Taeniatus* fry forage in groups. They scavenged for food continuously. I have found that these particular fry usually leave nothing to waste. If by chance I would over-feed, I wouldn't feed them again until late the next day.

Pelvicachromis taeniatus make a wonderful addition to any community tank. I know someone with lots of fry.

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Colisa lalia continued from page 17

Giving up on this pair, I moved them back to the community tank. History tending to repeat itself, the female was dead within a few days.

Several weeks later, I was ready to prep the 5 1/2 gallon tank for a pair of long finned zebra danios. Praise be to sponge filters and the natural infusoria they create! There were flame gourami fry in the tank. The breeding pair had seemed uncooperative and I never noticed eggs, but there they were. This time breeding was in the late spring, so there was no heater to foul up. The fry were fed on Liquifry and Tetramin egglayer flake food. When about a month old, they took newly hatched brine shrimp. I am anxious to see what color combinations I get when they are older. The original group who survived heat stroke is down to three and I think I have all females (does this tell us something, guys?).

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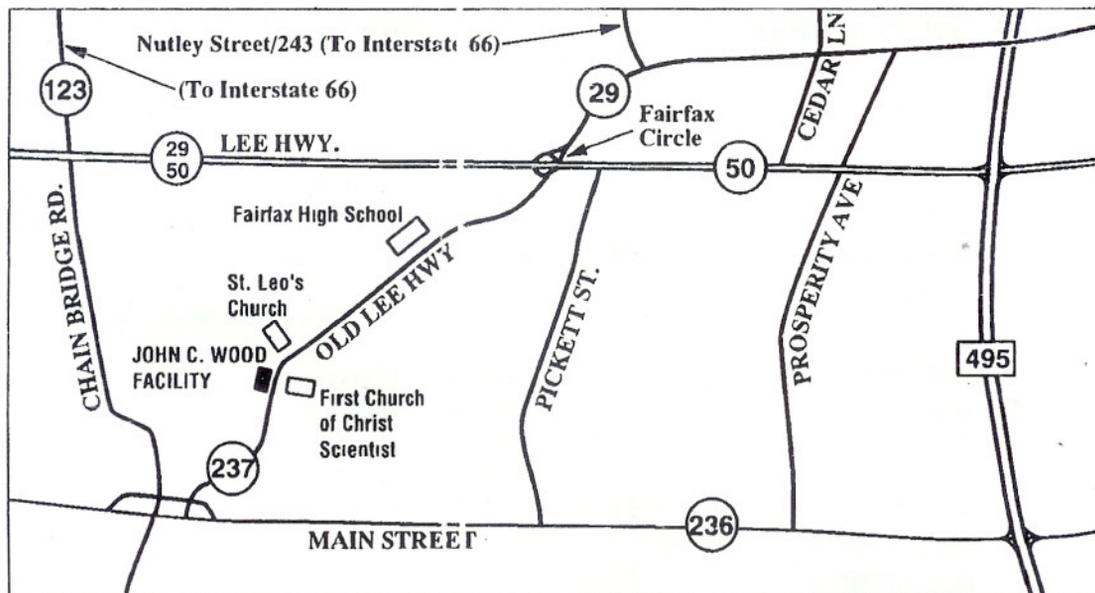
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MEETINGS: are held at the John C. Wood Facility, 3730 Old Lee Highway (Route 237), Fairfax City, VA. We meet in Room 6, which is located behind the police station. Doors open at 7:30 and meetings start at 8:00 p.m.—EVERYONE IS WELCOME!