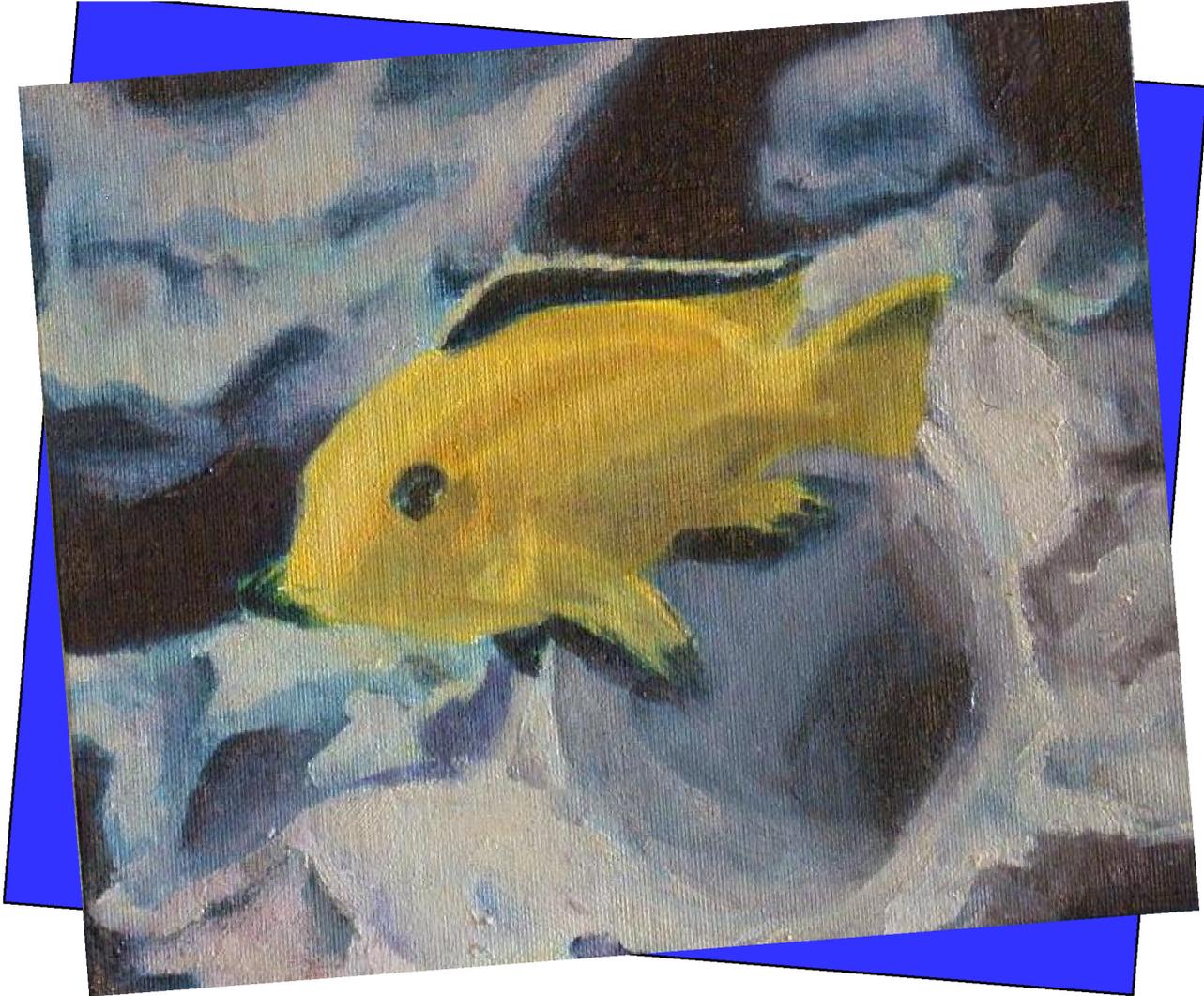




# Ottawa Valley Aquarium Society Newsletter

ovas.ca



The Ottawa Valley Aquarium Society (OVAS) is a non-profit, educational, and recreational organization. It has four main objectives:

- to further the study of all forms of aquatic life,
- to promote interest, exchange ideas, and distribute information concerning the hobby,
- to encourage breeding and displaying of aquatic life,
- to work toward the conservation of endangered species.

Our seventh meeting of the season is scheduled for March 24th 2008.

- Guest Lecturer Klaus Steinhaus
- "Tropheus - Are they really that scary?"**
- Mini-Auction
- Door Prizes



### **When are the meetings?**

OVAS meets on the fourth Monday of every month, with the exception of December, July and August. Meetings begin at 7:00 p.m. and usually run about two hours.

### **Where are the meetings held?**

The OVAS meets at the Jack Purcell Community Centre at 320 Jack Purcell Lane in downtown Ottawa (near the intersection of Gilmour and Elgin).

### **What happens at the meetings?**

We try to present a program that meets the needs and interests of the members. In the past, we have had slide presentations, video presentations and speakers from academic institutions. We also try to arrange tours of aquatic facilities, both here in the National Capital area and in other places. At the end of most meetings, there is a mini-auction where members may buy and sell livestock, plants and used equipment.

### **Are there any special events?**

There are three main special events that happen through the year. In lieu of a December meeting, there is a Christmas party. In March, as well as our regular meeting, we have a major auction. This auction provides an opportunity for members and non-members to buy and sell livestock and used equipment. In June, we wrap things up with a summer picnic.

### **Do you have to be a member to attend the meetings?**

Non-members can attend the society meetings. You don't even need to own an aquarium. All you need is interest in the hobby.

### **Why should you consider joining the OVAS?**

OVAS offers a stimulating and friendly environment for those who are fascinated by aquariums. It is a great place to get help from others who may be more experienced in the hobby. There are opportunities to sell surplus equipment and fish, and to buy them at great prices. There is a library of fish books available for members to borrow. Members also get discounts at many local aquarium stores.

### **How do I join OVAS?**

The best way to join OVAS is to attend one of the meetings. The exchange of knowledge and meeting like-minded people is what the club is all about.

### **2007-2008 OVAS Executive**

Executive

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## *OVAS March Speaker: Klaus Stienhaus*

Cichlids have been my hobby for over 37 years. But there was life before cichlids. I had my first fish tank (with Guppies) when I was 8 years old and I have never been without at least one tank since then. At the age of 20 and still living in Germany my interest turned to cichlids and I was permanently hooked. I joined the [DCG \(German Cichlid Association\)](#) and wrote several articles for their publication. This was an active group. It was divided into regional groups that had their own meetings, auctions and sales. The association published a monthly magazine which included articles written by the members, a "For Sale" section for members to advertise their fish and equipment and a greeting section for all new members. Once a year a membership list was published including addresses and phone numbers. It was a true hobbyists association since everybody helped each other out with problems and tips.

When I moved to Canada in 1982 I had to sell all my fish and equipment as I was unable to continue my hobby due to my new job. After things settled down a bit, the old "Fish Tank Disease" took over again. "I need another tank for my fry." and another, and another..... Now I am up to 24 tanks and my main focus has turned to the cichlids of Lake Tanganyika, specifically the genus *Tropheus*. Right now I

keep 5 different types of *Tropheus*, 1 of them is wild. These fish are just amazing to watch and their level of intelligence surprises me over and over again. Many people shy away from these beautiful fish because they "have heard" that they are difficult to keep.



This is nonsense. There are a few rules you have to follow: Don't miss your 30-40% water change every week; feed only vegetable based food (I feed Spirulina only); don't over feed. It is better to feed smaller amounts more often than one big feeding; have strong filtration (most of my tanks have "AquaClear" filters); avoid any drastic changes like a change to different food too fast, or a 3-4 degree temperature change during your water changes. I never had a *Tropheus* die on me due to an illness.

To really enjoy a hobby, there has to be a social aspect to it. Being able to discuss your

# ***OVAS March Speaker: Klaus Stienhaus***

## ***Continued***

one important part. The most important part however is to meet new people that have the same interests you have and make new friends. So I needed to look for an organization that not only promoted our hobby, but also included the missing social aspect. The local fish club [“Durham Region Aquarium Society”](#) was offering exactly that. So I joined and have met most of my present friends there. Since my main interest is with cichlids, I also joined the [“American Cichlid Association”](#).



I also find it very interesting to see and hear all the different reasons why people get hooked on cichlids. To me, they are just amazing to watch and to study. They really do have a "Personality". I try to offer my cichlids an environment as close as possible to their natural habitat. It is the only way to see their

true behavior and character. I can sit in front of my tanks for hours and try to figure out the social structure in each particular tank and the weekly water changes are definitely a labor of love. But there is nothing more fun in this hobby then to sit with other cichlid "freaks", have a few beers and talk cichlids until the small hours of the morning. So, if somebody wants to come for a visit, feel free to do so.

Klaus Steinhaus

### **Membership Rates**

Adult        \$15

Family     \$20

Junior       \$5

Available at the monthly meetings or  
online at ovas.ca



# 2008 OVAS Giant Auction: *The Good, The Bad, And The Ugly* - *Some of Your Thoughts* -

Thank you also to the companies who donated our amazing raffle prizes this year, AquaNourriPlus.ca, Aquariumshop.ca, Aquarium Services, Aqua Valley, Critter Jungle, Fishtail, Reef Canada, Tanganyika H2O, Worldfish.ca, and Uniquely Affordable.

"The good: I think the kitchen was really well run this year. The addition of tickets for pizza was a great idea! Turing the auction so that items were easier to get to the auctioneers was also good!...The ugly: Items should be labeled with common names as well as Latin and should be auctioned by lot and common name only. If you need to verify Latin names for purchase that is what the viewing time and lot numbers are for. Auctioneers should not be burdened with scientific nomenclature." -Kennyman

"I really liked the labels on Ken's plants. It gave the little bit of extra information that could make a difference when people are choosing what to add. There were a few plants he brought that I couldn't remember details about. It potentially saved me \$\$ because I didn't bid on plants that would have withered away in my tank. Perhaps all plants should have those labels that the seller can fill out appropriately...that would work for fish too." -Fishnut

"Congrats to the 'first timer' auctioneers for being 100% braver than I am! I wouldn't do it cause I knew id mess up all those names! its nice we are willing to give people a chance to try new things! I had a blast and thought it was GREAT! Good job to ALL now you can relax have a beer .. its over for another year!" - Cora

"One suggestion: Create a role for "spotters". I noticed a few times that it was hard for the auctionneers to see everyone. If you had 2 or 3 people in the room

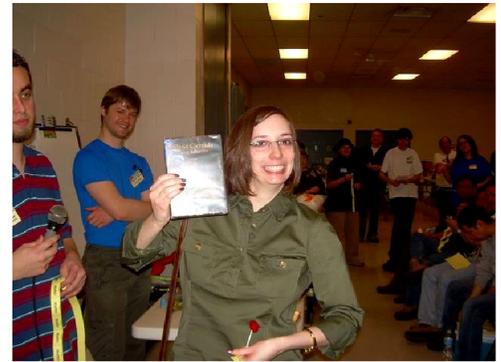
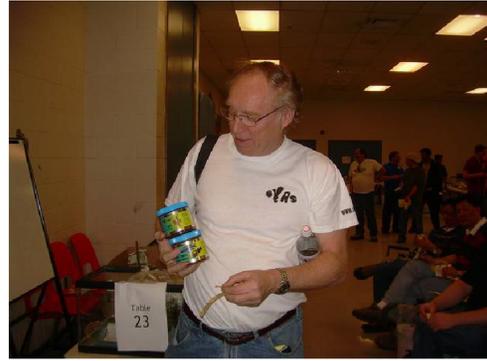
standing in the crowd with big flashy clothes (so that the auctionneers could spot them) these spotters could help keep an eye on the crowd and point out if there are still multiple bidders in their area...Great day! Loved it!! Keep on the good work!!!" - Kats

"Fish: it seemed most were bagged properly this year, kudos to you all! (I agree with common names on the bags, Vizzy even had a pretty picture label with care included)Latin names are not easy for everyone to pronounce! Pizza tickets! great idea! Cashing out - I liked the signed receipts for the treasurer and cashing out at the end was done quite quickly! Thank you for your patience everyone!" - Nerine

"This was my first giant auction and I thought it was great. The items moved through really quickly...The one suggestion I would have and it has already been suggested would be to do small groups of items. As Cbellehumeur stated 30 minutes of plants, 30minutes of something else, ect. It would be a good way for people to take a bit of a break as well." - Jeff1192

"THE GOOD: Great raffle prizes again ,good venue, entertaining at times, and overall well organized.THE BAD: [it] would be nice is if they were auctioned off in sequence, so if you know there's something on table 14 you want and they're on 10 you can go for a smoke or whatever...THE UGLY: Having to spend time scraping off those auction stickers. then having to use lighter fluid to get the glue off." - Catfishsteve

## 2008 Giant Auction



# Photo Opts



# Family Microdesmidae, the Worm- and Dartfishes

By: Robert Fenner and Anthony Calfo



*Nemateleotris magnifica*: known commonly as the Firefish, this fish is perhaps the most popular and recognized member of its family. They are easily cared for and make fine aquarium specimens with peaceful tankmates and a steady supply of zooplankton. Photo by Robert Fenner

## Overview

Wormfishes are close kin to the large and familiar family we call gobies, as members of the same suborder - Gobioidae. They share many general features as aquarium candidates, from their small size to peaceful disposition, and the need for careful consideration with tankmates in kind. By and large, they are easily intimidated by active community fishes that will out-compete them for food, if not outright terrorize them. Active fishes like damsels, tangs and wrasses are unsuitable tankmates in all but the largest aquariums and may contribute to the slow attrition of shy

Microdesmids. Yet given adequate cover for retreat, small frequent feedings, and opportunities to feed, this group is predominantly hardy and easily kept. A few species here are wholly prepared for the rigors of new aquarists and life in smaller aquariums, and several have been observed to spawn in captivity. The use of inline, mature, fishless refugium is strongly recommended to support continuous plankton production as a food source.

The Microdesmids are known by many common names in the trade such as Dartfish, Firefish, Ribbon, Bar & Gudgeon "gobies". The family is made up of less than a dozen genera and about sixty species. As aquarium candidates, they are ironically well understood yet commonly neglected. Too often, they find themselves in mixed community tanks with active or aggressive fishes in whose company they dwindle. This group at large has many common traits: elongate body forms (some anguilliform or "eel-like"), planktivorous feeding nature, and small scales. They are found distributed in tropical marine waters, with most favoring life above soft substrates. Most Microdesmids are limited in size to adult lengths of no more than a few inches (6-10 cm) total length.

# Family Microdesmidae, the Worm- and Dartfishes (continued)

By: Bob Fenner and Anthony Calfo

The acquisition of a healthy specimen is one of the biggest obstacles to keeping Worm- and Dartfishes, because of their notorious sensitivities to transport. As small-scaled fishes, they suffer from rough handling and abrupt changes in water quality. Many are shy and skittish in brightly-lit systems. Once disturbed, these fishes dart remarkably quickly and hurl themselves into harm in the confines of an aquarium, if not literally launching themselves out of an open top or crevice. Many of these fishes have given themselves up as "carpet fodder" for lack of a secure cover on the aquarium. As you might guess, they are prone to the same high-speed, fitful displays at the slightest provocation by an aggressor. With no other practical means of defense, Microdesmids are remarkably fast swimmers!

The list of bullies that will nip, chase or harass Dartfishes is very long. The toll of aggression need not be so obvious as the torn fins of this *Nemateleotris decora*. The sheer presence of active community fishes like wrasses and tangs can intimidate Microdesmids into not feeding well or at all, leading to starvation and undue stress.

When inspecting candidates for purchase,



Photo by Robert Fenner

remember that many are naturally shy and inclined to hide. Assessment of gross health characteristics is the ticket here. Look for clean bodies, clear eyes, slow and deliberate gill movement, and intact fins/soft rays; many dartfishes have long filamentous pennants, which are easily chewed off by aggressive tank mates. Extended dorsal fins are flicked frequently while hovering and used, perhaps as a visual cue to kin, and are a normal behavior. Hollow or sunken bellies and weight loss are common afflictions with new imports. Boosting immunity with superb water quality and good diet is crucial to establishing healthy imports.

Infections are cause for great concern here, as these fishes do not tolerate popular therapies well. Metals and organic dyes can be harsh, and prophylactic freshwater dips may require



## *Family Microdesmidae, the Worm- and Dartfishes (continued)*

By: Bob Fenner and Anthony Calfo

underwater in the bath - yes... they can jump way out of water! It's best instead to acquire apparently healthy individuals and quarantine them strictly in a quiet, dim tank for heavy feedings and undisturbed acclimation to captivity. Shy fishes such as these can also learn to be more at ease and take food readily from an aquarist in isolation before being forced to compete in the display.

Feeding is a straightforward endeavor with Microdesmids – they are strict diners on zooplankton. Most hover slightly above a soft sand or fine rubble seafloor and catch suspended planktonic microcrustaceans. Gut analysis has revealed that **copepods** make up a significant component of their diet. *Note:* understand the important difference between copepods and amphipods - they are not readily interchangeable prey for many fishes like Microdesmids, or Mandarin Dragonets, for example.

There is little doubt that fishless refugiums plumbed in-line for producing plankton are invaluable for keeping these and many such delicate fishes well-nourished. For zooplankton substitutes, "wet foods" have a decided advantage here among the suspension feeding planktivores. You can make a slurry

of finely minced, thawed meats of marine origin (mysids, *pacifica* plankton, etc.) or you can purchase ready to serve (keep refrigerated), jar foods like Sweetwater brand plankton. Most Worm- and Dartfishes will also take dried prepared foods like fine pellets in time. Slowly sinking varieties are favored more than floating varieties. Argent-brand "Cyclop-eeze" is another excellent option (dry or frozen) for small reef planktivores. As with all fishes, you are warned to resist using frozen adult brine shrimp for anything more than an appetite-stimulant or minor component of the captive diet due to its hollow nutritive value. Freshly-hatched brine shrimp nauplii, however, can be very nutritious, just as cultured rotifers are. Any live foods can also be enriched further with HUFA- rich supplements or by gut-loading the prey (spirulina, yeast, etc.).

Worm- and Dartfishes are generally quite peaceful and tolerant of each other (the former moreso). Interspecific aggression with new imports is largely an artifact of captivity and the confines of small aquaria. Dive and field research observations cite most members of this family occurring naturally in pairs as adults and often in colonies as juveniles. With adequate space and feeding opportunities, two or more individuals of the same species can

# Family Microdesmidae, the Worm- and Dartfishes

By: Bob Fenner and Anthony Calfo

usually be kept in an aquarium.

Microdesmids are reef-associated, but occur over a wide range of depth. Helfrichi's Dartfish, pictured here, may be separated from the common Firefish (*N. magnifica*) by well over 100 feet on the reef! This deep species is collected at the limit of safe recreational diving.



Photo by Anthony Calfo

Little is documented about their reproductive events in captivity [see Schiller (1990) for a report on *Nemateleotris*], although some at least are known to deposit their eggs on substrate and provide at least some level of parental guard. For these, courtship involves posturing and display in open water at dusk before the actual spawning event commences in a burrow or depression in the sand.

## Keys to success with Microdesmids:

- Offer frequent, feedings with zooplankton

(1-3 times daily)

- Use inline, fishless refugiums for producing natural plankton
- Keep a tight cover on the aquarium; block even the smallest crevices and openings
- Provide dim lighting or slowly acclimate new specimens to bright lamps
- Include soft substrates (sand or mud, with fine rubble) for burrowing and feeding opportunities
- Keep only with strictly peaceful tankmates
- Most can be kept in pairs as adults or larger groups as juveniles
- Live food may be needed to stimulate appetites before prepared foods will be accepted

## Best Bets of Worm and Dartfishes:

*Nemateleotris magnifica* (Fowler 1938), the Firefish or Fire Goby: this species is perhaps the most widely distributed and popular in the trade ranging throughout the Indo-Pacific from the eastern African coast to Hawai'i. They have an adult size of 3.5" (9 cm). Firefish are very peaceful to conspecifics in the wild, with several often sharing the same bolthole or retreat. *N. magnifica* is the shallowest occurring of three species in this genus, found in less than 15 m. As such, they

# Family Microdesmidae, the Worm- and Dartfishes

By: Bob Fenner and Anthony Calfo

may be the most forgiving of brightaquarium lights. They are hardy, albeit bashful... no more than one per 20 gallons of aquarium.



Photo by Robert Fenner

*Nemateleotris decora* (Randall & Allen 1973), the Elegant, Purple, Queen or Royal Firefish: Indo-Pacific in distribution, this species also grows to approximately 3.5" (9 cm) at maturity. They are exceptionally hardy and adapt easily to aquarium life and prepared foods. This species demonstrates variable tolerance of conspecifics. It may be best to buy and keep them in established pairs only. *N. decora* is generally found below 25 m.



Photo by Anthony Calfo

This dartfish species has been observed to spawn in captivity (Schiller 1990).

*Nemateleotris helfrichi* (Randall & Allen 1973), Helfrich's Dartfish: it is the deepest-dwelling species of the genus, rarely found in less than 40 m. They are imported to America predominantly from the Marshall Islands/Micronesia, and have a small adult size of 2-3" (6 cm). This exquisite little fish is hardy once established, and fairly tolerant of conspecifics, but demands the most peaceful tankmates. They are easily intimidated into starvation and are best reserved, perhaps, for a biotope or species-specific display.



Photo by Anthony Calfo

## *Are Tropheus Difficult?*

By: Klaus Steinhaus

There have been many articles written about these fish, many good ones and also a few bad ones. However, I felt compelled to write this article because I still sense a lot of bad vibes when it comes to these beautiful cichlids. Many hobbyists still feel scared of giving them a try because the reputation they have is not the best.



**Tropheus sp. "Cape Nundo" (Golden Chisanse)**

When talking to my fellow cichlid lovers, the answers I get are usually the same: "They are way too difficult to keep" or "They are way too expensive". Another argument is "I would like a nice community tank". Well, with this article I like to remove some of these arguments and fears. OK, I admit suffering from the "Tropheus Syndrome" because I am a Tropheus nut. Since keeping my first group in the mid 1970's, I have been fascinated with the behavior of them, their social structure and their liveliness. A tank full of Tropheus is

never boring to me. So please, take this article with a "grain of salt" because it's hard for me to stay impartial.

These fish are around for quite some time. Discovered by J.E.S. Moore in 1896 and described two years later by George Boulenger, Tropheus did not get into our aquariums until 1956. The first variant to make it was Tropheus sp. "Rutunga" and from that time on the Cichlid hobby has never be the same. Very few cichlids had the ability to turn our hobby upside down like the Tropheus. The only one coming to mind is the Discus. The prices we had to pay for these fish were astronomical 35 years ago but that did not stop us cichlid nuts from buying them.

The knowledge about Tropheus was still fairly limited as to dietary requirements and behavior and a lot of hobbyists dreams literally went down the toilet.

Much has changed since then due to the research and observations of people like Ad Konings, Peter Schupke, Wolfgang Staeck and many others. We know now what to feed them and what to stay away from. We know that we need to keep them in larger groups and not to disturb their social structure.

Now I am far away from being an "expert"

## *Are Tropheus Difficult? (continued)*

By: Klaus Steinhaus

but having kept these fish for over 30 years, I have learned many things the hard way. This article is strictly based on my experience and will hopefully help somebody else to save a lot of grief and money.

OK, let's get to it. The first thing I tell anybody who never kept Tropheus is that they are much easier to keep than many other cichlids. That is a fact and has been proven many times over. To keep any fish, you have to obey some rules. No difference here.



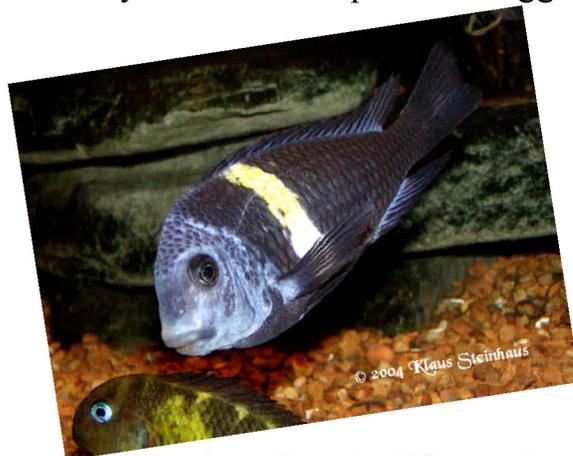
**Tropheus sp. "Katonga"**

There are several things to consider before you go out and buy yourself some Tropheus:

Do you have enough time to look after them properly? Tropheus are happiest with a set regimen like the same feeding time; at least one 40% water change weekly; you should watch them every day at feeding time and look for any unusual behavior.

Do you have enough space for your new

beauties? Tropheus can be quite aggressive and need to be kept in groups of at least 12-15 specimens. That requires a tank of 65g as an absolute minimum. It would be better to start with a group of 18-20 specimens in a 90g or 100g tank to give the necessary swim room they need and to spread the aggression.



**Tropheus Duboisi "Kigoma"**

Do you know which Tropheus variant you would like to keep? My recommendation is to start with a group of 15 -20 juvenile Tropheus "Duboisi" of about 1.5"-2" in size and let them grow up together. This will pretty much guaranty you a good functioning group.

Do you want a species only tank or a community tank?

What type of filtration will you use? Tropheus need clean water to thrive and stay healthy. So good filtration is a necessity.

## *Are Tropheus Difficult? (continued)*

By: Klaus Steinhaus

Once you have made up your mind on these items, the fun part starts. Get your tank set-up and cycled. Don't rush (I know it's not easy to be patient) but give the tank some time to develop into a healthy environment. Watch the water parameters like nitrite, nitrate, pH and hardness.

As for the decoration of a Tropheus tank, well people have different opinions and tastes. I like to offer my fish an environment that is as close as possible to their natural habitat.

I absolutely hate bare tanks because they only serve the purpose of the owner and not the fish.

Some sand or fine gravel will do just fine as substrate.

For the rock structure I like to use limestone pieces as large as I can get into the tank and build it in the two corners right up to the surface. Large rocks have several advantages, they make the tank look larger and more natural plus you only have to take out a few rocks to catch a holding female. Just make sure that your rocks are stacked securely.

The next item to discuss is food. Tropheus are herbivorous cichlids that live along the rocky shore line where the sun is capable of penetrating the clear water and helps to produce an algae layer on the rocks. This

layer is usually covered with sediment due to the constant surf. This sediment covered algae layer is called "aufwuchs" and represents the natural food source for our Tropheus. Since it is impossible to recreate this aufwuchs layer under aquarium condition, we have to find a substitute that comes close and that is where opinions differ.



**Tropheus sp. "Nangu"**

I have tried many types and brands of food and have found that a good spirulina flake works best for me. However, the variety of food being offered these days is immense and sometimes a bit confusing for a newcomer to our hobby. I know of a number of people that feed small pellets exclusively and their fish are doing well too. I have tried these pellets with my fish without success so I keep feeding the flake because my fish seem to like them better.

## *Are Tropheus Difficult? (continued)*

By: Klaus Steinhaus

The statement that Tropheus have to be kept in species only tanks is in my opinion misleading and not correct. Yes, it is the best and easiest way to keep these cichlids but it is not an absolute must. The problem is to find other species that will match their dietary requirements



**Petrochromis Trewawasae**

and their temperament. The good thing is that we have a very nice and interesting selection of possible tank mates available to us. Petrochromis, Tanganicodus, Eretmodus and Spathodus species are ideal company for our Tropheus. Simochromis & Pseudosimochromis would also fit the description nicely.

I have also seen many hobbyists keeping different Tropheus variants together in the same tank. This practice is something to be very careful with. It is my goal to keep any species I maintain pure, meaning to keep them as they are in nature. By keeping different variants together you give them the chance to interbreed and produce hybrids that

eventually will get out to other hobbyists.

However, there are some combinations where the possibility of interbreeding is fairly minimal. Some examples are Duboisi / Moorii or Duboisi / Brichardi or Moorii / Brichardi. I too have at times used one of these combinations due to space restraints for a short time period and have had no problems but there is no 100% guarantee. Given the right circumstances, they will interbreed.

Breeding these cichlids is not a very difficult task. Conditioning the females seems to create the only problem. The actual breeding is the same as all mouth brooders. A Tropheus female usually breeds about 4-6 times per year and their clutch size is very small. Anywhere from 5–15 fry per spawn is a common result. The fry, after being held by the female for about 4 weeks, is already 10-12 mm in size and look like completely finished miniature Tropheus. They will stay close to the female and she will take them back into her mouth if threatened.

In closing I would like to say to all cichlid lovers that did not have the pleasure of maintaining these beautiful fish:” Don’t be afraid of them. They are much easier to keep then you think and the only real danger is that you too will catch the “Tropheus Syndrome”

# Garden Pond - Tips, Tricks and Reminders for Ease of Care and Beauty! Part I

By: Anthony Calfo



If you are considering building a pond or even if you already have some pond experience, this article will introduce you to some novel tips and tricks, dispel some myths and perhaps reinforce good notions you may already have for pleasant endeavors with aquatic gardening. Whether your preference is for flexible pond liners dressed to make a natural-looking oasis or for formal appointments in stone, concrete or tile, there are commonalities to the keeping of all outdoor ponds that we can easily summarize for success. Garden ponds can, and usually should be very simple to construct and operate. Maintenance tasks are minimal and require less time than any other expressions of keeping aquariums or aquatic features. With good planning and a strict adherence to some simple rules you can enjoy a pond-keeping like a pro! Let me take you on a pictorial "crash course" of sound techniques to make sure your aim is spot-on: Far and away, the biggest concern and complaint about garden ponds is algae. For this reason more than any other, folks tired of fighting a

losing battle with the unwanted greens ignore or shut down their ponds. This is most unfortunate since prevention or solutions to unwanted algae are inexpensive and often quickly rendered! Dreadful mistruths and half-truths abound about causes and cures for these low-lives (literally), most notoriously that excess sunlight causes algae and reducing light will cure it. Bunk. Rubbish. In plain language, sunlight does not cause nuisance algae... excess nutrients cause unwanted algae. You can find many successful ponds in full blazing sun with crystal clear water, and find many more ponds in poor or indirect light swimming in green scum. Reducing unwanted algae is entirely about nutrient control.



The garden pond provides a beautiful place to enjoy nature. Right in your own backyard! Photos by Anthony Calfo

Far and away, the biggest concern and complaint about garden ponds is algae. For this reason more than any other, folks tired of fighting a losing battle with the unwanted greens ignore or shut down their ponds. This is most unfortunate since prevention or solutions to unwanted algae are inexpensive and often quickly rendered! Dreadful mistruths and half-truths abound about causes and cures for



# *Garden Pond - Tips, Tricks and Reminders for Ease of Care and Beauty! Part I (continued)*

By: Anthony Calfo

these. Bunk. Rubbish. In plain language, sunlight does not cause nuisance algae... excess nutrients cause unwanted algae. You can find many successful ponds in full blazing sun with crystal clear water, and find many more ponds in poor or indirect light swimming in green scum. Reducing unwanted algae is entirely about nutrient control. low-lives (literally), most notoriously that excess sunlight causes algae and reducing light will cure it. New hobbyists are admittedly prone to being eager and may overstock their pond (too many fishes added or added too quickly) and overfeed their new fishes. In such cases, it could not come at a worse time since a new pond may be rich in minerals or nutrients from being recently filled with tap or other source water (e.g., well water is often loaded with nutrients that fuel algae). In the early stages, filters are immature and plants are not established or may not even have been added yet. The textbook solution is prevention and patience. Add as many plants and filters (manmade and/or bog) as you can early, and proceed very slowly with fish stocking and feeding. This speaks directly to the issue of nutrient export elements (plants and filters) versus nutrient import elements (hungry fishes, turtles, frogs, etc.). Pondkeepers with an appreciation for bog and submerged aquatic plants can even get to the point very soon

where no manmade filters are required whatsoever! Even large pools can remain crystal clear all year around and enjoy hearty loads with fishes that do not need fed, all for having patience in wait for strong plant populations to grow. Read on about how to find and pot those plants (and how to *still* avoid nuisance algae if you are too eager and impatient, with a small investment in technology!). The fundamental goal here is to strike a balance much like a successful ecosystem in the wild. We want seed our pools with desirable nutrient consumers and provide these organisms with just enough sustenance to thrive in a tidy aquatic microcosm. Some of the wonderful dynamics at play include: insects attracted to the water that lay eggs and provide larvae for fishes to eat, maintaining water quality so that just enough microalgae develops to sustain grazing herbivores (snails, fishes, etc.), mechanical filters catch gross particulate matter for quick export (cleaned frequently), pumps used for water circulation or biological filters, maturing rooted and floating plants absorb considerable amounts of nutrients from decaying matter (fish waste, leaf litter, etc), and small predators like frogs and catfish control the potentially explosive reproductive



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rates of common carp and goldfishes by eating the smaller fry.

**Buying a water pump:** Even if you choose to forego buying or building a large biological filter because you'll have a very heavy plant population and low fish load, you clogging quickly or wearing out too soon. Few garden ponds can survive (especially with fishes) without some form of constant will still need to protect water pumps from water movement. It's a sometimes fatal mistake yet not uncommonly misadvised directive that shutting the pumps off at night is OK to save on electricity, or for any other reason. This is dangerous and not recommended. Since plants and algae only photosynthesize and produce oxygen during the day, natural biological processes lead to a drop in oxygen levels at night and turning off of circulating pumps lets this drop fall even further. Frustrated pond keepers that have fish that seem healthy by day but are dead the next morning should consider oxygen deprivation (especially when it's the larger/largest fishes that die first). Even without turning off pumps, the dynamic can occur in systems that are suffering badly from "green water" (suspended unicellular algae), which due to their high density, can lethally lower oxygen levels (for these fishes) at night with respiration. Enough

said... everyone gets a pump and runs it full time at least for the active pond season (above 50 F). There are many wonderful features with water pumps for your pond anyways like fountains and waterfalls.

There are many choices among water pumps starting with external versus internal. Beyond any obvious constraints (construction and layout of pond, aesthetic preferences, etc.) that lead you to a specific pump size or placement, one of the most likely influences on your purchase should be efficiency. There are sometimes extraordinary differences in power consumption between brands for like-sized pumps. A good pump can be had for most ponds utilizing no more than a few dollars in electricity monthly. These tend to be the magnetic drive units, which have an impeller that "floats" on a shaft inside the pump housing. They do not suffer from resistance placed on them by valves used to reduce water flow (they actually run better/longer with at least a little resistance). And the modern evolution of this style pump has essentially overcome previous shortfalls with strength to operate the pump at great head (pressure and height, as with long runs of pipe and many joints of constriction). Only for the heaviest duty needs will a direct-drive pump likely be

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needed. These units sometimes are much stronger and can pump higher than magnetic drive units, but they come with a price – most notably expense to operate. Most popular direct-drive pump models in the hobby are not submersible either. Pictured here is a nice mid-range pump line:



A quality pump is an invaluable asset for your pond.

the Supreme "Mag-Drive". They are a good value in my opinion - balancing cost of purchase, efficiency and expected life.

**Filters and Pre-filters:** Submerged pumps used for feeding water falls, biological filters, fountains or simply just water movement and aeration in the pond can be protected with an incredibly simple, inexpensive and low maintenance DIY pre-filter. With a bucket, some coarse media (lava rock, aquarium filter "bio-balls", plastic hair curlers, etc.) and a polyester pad for pre-filtration, a good pump guard or even adequate biological filter can be constructed for mere dollars – these are DIY "**bucket filters.**"



Starting with an empty bucket, place your submersible water pump at the bottom after it has been properly fitted with any flexible or rigid tubing your need. Next, fill the bucket with rinsed bulk media (lava rock is used in the illustration here... one \$5 bag at the local home & garden center fills two five gallon buckets!) to serve as a gross mechanical and biological filter. Next, cut a snug fitting layer of thick spun polyester fiber pad for a prefilter to sit above the media. I prefer to use two prefilter pads on top to be rinsed alternately.



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Is the specially designed filter media marketed for garden pond filters really better? Well... yes, often they are. But this DIY bucket filter is not designed for keeping heavy fish loads or as a primary biological filter. We are merely trying to construct an easy to service and inexpensive pre-filter that will keep our water pumps running smoothly. In ponds with adequate water flow, proper feeding and stocking, and reasonable maintenance (e.g., cleaning out leaf litter periodically and doing regular partial water changes), you can expect a DIY bucket filter with lava rock, "bio-balls", or the like, to need serviced once monthly (rinsing the pre-filter pad). Remove the pump twice annually for a thorough cleaning of all aspects (**Tip:** running the pump overnight in a tub of water with a few cups of vinegar to clean it out nicely).



**Tip:**

Flexible tubing can be a bit difficult to force down onto insert fittings far enough for a good seal with pressurized pumps and plumbing. A really easy trick is to heat a cup of water (without a tea bag) and soak the tubing ends for a few minutes. This can even be used to "persuade" tubing sizes that are a bit smaller than they should be to marry some insert fitting. Hot flexible tubing slides down easily onto insert fittings and then shrinks very snug once it cools to make a very good fit. Plastic or steel hose clamps may still be necessary as with pressurized installations. Aquarium hobbyists are accustomed to using clear vinyl tubing for pump applications, but this material is a bit weak and too clear for outdoor use (algae growth inside). For pond use, spend a little more money for durable tubing with fiber braids infused (see picture above), or invest in actual flexible PVC tubing.



Although flexible tubing offers convenience to install and is necessary for awkward or irregular paths of water flow, hard pipe really is preferred whenever possible for its durability and utility. Outdoor pond hardware must withstand the rigors of weather, home and

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garden tools, foot traffic, animals and children and various other challenges. Use flexible tubing minimally as it is more prone to leaks and the accumulation of mulm and algae through opaque or clear piping walls. Hard pipe, on the other hand, can last and remain trouble-free for many decades if installed properly. If you are a "weekend warrior" and really have no practical experience with plumbing, please do seek at least a little bit of professional advice. Before committing the time and expense to hard lines, you will want to know the differences between ball and gate valves, why is it critical to use cleaner and primer before gluing any joints, and the fact that not all plastic pipe is compatible in size or weld, requiring specialized or transitional glues sometimes as with merging PVC and ABS (pictured above in black and white colored pipes with green glue).



**Hiding unnatural features** of a pond takes just a little bit of strategy and creativity.

External commercial filters (and home-made

external bucket or barrel filters) are commonly submerged under ground – partially if next to the pool, or perhaps almost fully if at a higher elevation as with a hill or peak of a waterfall feature. Hard pipe plumbing can usually just be buried (left picture above – exposed pipe); soft tubing can also be buried if shielded by conduit to prevent chewing animals or future garden shovels gone astray from piercing the lines. Weather-resistant equipment like some UV sterilizers (center picture above) may be covered in mulch or similar landscape dressings. A proper roofed hutch would be best of all but they are the hardest to hide discreetly. Some hardware made for the aquatic garden is designed to try to blend into the landscape at least a little, like this faux granite outdoor speaker (right picture above) that has been in my service for nearly a decade... getting covered in snow every winter...

Check out April's Newsletter for a continuation of Anthony Calfo's "Garden Pond - Tips, Tricks and Reminders for Ease of Care and Beauty."



**Jen Kershaw** graciously donated a copy of her painting of a yellow lab for us to use in our Newsletter. Read More below to find out about Jen. Jen's work will be featured in upcoming Newsletters and any other OVAS artists are welcomed to contact me the newsletter editor to have their work displayed in an upcoming issue.

### **Jen Kershaw - An Artist's Biography**

In 2004, I earned my B.A. Honours degree from the University of Guelph, majoring in Studio Art with a minor in Art History, graduating as an Ontario Scholar. Soon after, my husband and I loaded up our elderly car and an equally decrepit U-Haul and headed off to Ottawa, Ontario to begin a new life. Currently, I am a member of the Nepean Fine Arts League, working on several commissions, and preparing to participate in this year's Art in the Park, as well as other shows and sales throughout the summer. In addition to fish and their environs, I enjoy painting a variety of subjects ranging from landscape to still life to portraits, and the occasional abstract. Common themes I explore in my work include: the substance of light; the biological; and most recently, the technological – particularly the obsolete.

To learn more about me and what I do, please visit my blog:

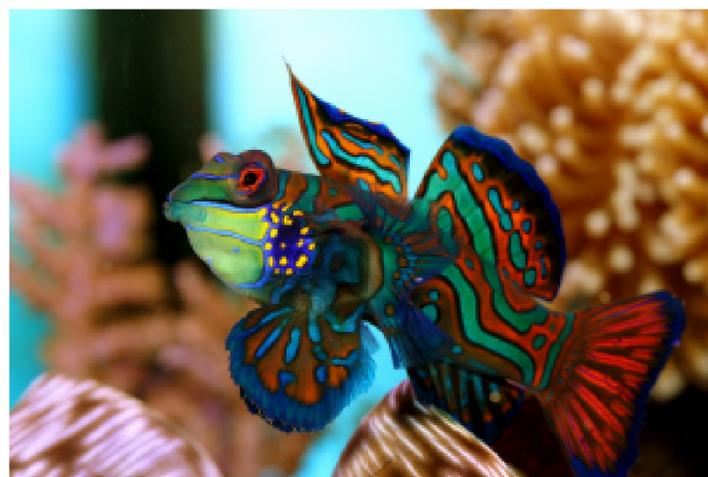
<http://jenkershaw.blogspot.com/>

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**Congratulations to February's Photo of the month contest winner**

**"Dave88"**