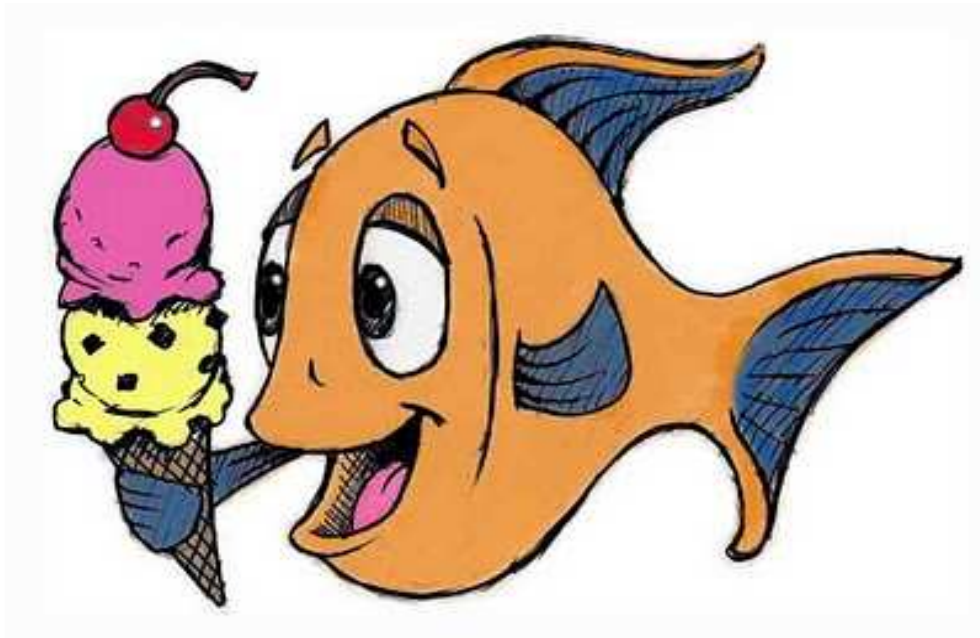


# B.R.A.S.S.

Barrie Region Aquarium Society of Simcoe



# Bulletin

NEXT MEETING  
MAY 10, 2011  
7:00PM - 9:00PM  
MAPLE GROVE PUBLIC SCHOOL

# The Mail Bag

## From the Office of the President

Hey it's May already. Not sunny and dry but it is May. Yard sales are starting to show up. Our first year is just about over. For our first year I think we have done quite well.

Next month is our last meeting for the year. The June meeting is the meeting where we nominate people and vote for BRASS positions. So you might be thinking of people you would like to nominate for the different positions. We still have a lot of openings we can fill. Breeder award program, horticulture awards program and other positions are available for people who would like to get more involved with the club. The more you put into the club the more you will get out of it and the more we will all enjoy BRASS.

Our executive has been working on our constitution for the past couple of months and is now ready to present it to you for your reading and voting in June to accept it as written. We hope to have copies for the May meeting and will vote on it at the June meeting.

We have a guest speaker, Bob Wright, coming to the May meeting. I am looking forward to meeting Bob who is presently president of CAOAC. Although his talk is not about CAOAC we hope we will get some answers about our joining. Hope to see everyone there.

Doug



## Message from the Editor

MAY!!!! Where has the time gone? It seems like a month or so ago it was Christmas.

Time to fire up the BBQ, enjoy a drink outside and relax between water changes. If you are one of the people in our group with MTS (Multiple Tank Syndrome) you may need to wait until all your water changes are done or relaxing may sound more appealing and the tanks will wait for another day.

I have yet to receive any suggestions as to what you want to see in the Newsletter, so I will continue pulling articles that I hope you will enjoy.

Please don't forget your auction items this month! We need to keep our auctioneer busy!

Kara



# Secretary's Report

As submitted by Bonnie Smith

Minutes of meeting on April 12, 2011.

The meeting was attended by thirteen people. The minutes of last month's meeting was read by Doug Fleming. Doug Smith reported he still had no reply to his e-mails from CAOAC regarding our membership. Kara apologized for the late Brass Bulletin, there were some difficulties so she was unable to get it to everyone before the meeting, she will e-mail it tonight.

Jeff showed us a logo he has been working on. A fresh water puffer playing a brass tuba. Lots of ideas and suggestions were discussed, gold, green and black were the colours decided. Everyone liked the idea, Jeff is to fine tune the drawing and bring it to next meeting so we can vote on it. Doug has a connection for silk screened T shirts at a good price if we want to put the Logo on a T shirt for the Club. Everyone thought it was a good idea, discussed tan or gray as a good colour with the Logo.

Randy reported that we cannot use the Union Hall for meeting next year. He was also supposed to bring his egg tumblers to demonstrate for DIY tonight but his dolphins wouldn't let him. They spit out a mouthful and aren't ready yet so the tumblers are in use , he'll try to bring them another time.

Our guest speaker tonight was Jeff Mountjoy from Martin Mills. He showed us slides on how pellet fish food is made. A very informative and interesting talk, thanks Jeff.

Our Open Forum discussion was about water heaters. There are three different types of tanks, all can be the same gallon but have different BTU ratings. This makes the recovery of heat very different, information good to know when doing a lot of water changes.

Doug Fleming shared with us how he coats the back of an aquarium during our DIY time. He uses the vinyl used by sign shops. It looks nice and comes in a variety of colours. Once it is on it doesn't move, it is a solid colour unlike the effect of painting.

We finished off the night with our 50/50 draw and Doug Fleming once again led us through a very lively and enjoyable auction



## Your First Planted Tank

Borrowed from [http://www.aquahobby.com/articles/e\\_plant.php](http://www.aquahobby.com/articles/e_plant.php)

Let me start this article by stating that **I am not a specialist in aquatic plants**. Despite having about 15 years of experience with fishkeeping, during which I always kept live plants in my freshwater tanks, my true interest in learning the fine details and requirements of the many aquatic plant species started only about 2 years ago. But that's already enough for me to consider myself an initiate in this aspect of the hobby, and dare write this article.

The first thing that my experience allows me to state is that keeping healthy plants is essentially **no different** or more complicated than keeping healthy fish. All you have to do is realize that, just like fish, plants are **living beings** who will thrive as long as their basic requirements are reasonably met. Just like fish, there are hardy species which can easily tolerate less favorable conditions or mistakes made by the beginner, and there are very sensitive species recommended only for the more experienced hobbyist. This article will describe a simple, inexpensive procedure that allows anyone to quickly create a successful planted tank. But first, let's discuss a few details regarding the choice of the tank and other equipment you're going to use.

### Tank dimensions

As you know, tanks come in all sorts of sizes and shapes. The most important thing to consider when choosing the tank is that it shouldn't be too tall. This is because the actual amount of light that a plant gets decreases rapidly as the water gets deeper. For a beginner tank, **heights of 30 to 45 cm are adequate**, and a total volume of 50 to 200 liters should be appropriate to allow a rich aquascape without spending too much money.

Another detail that's also worth paying attention to is the tank's length. Since the best type of lighting for simple planted tanks are fluorescent tubes, and they come in standard lengths (see table below), a tank should ideally be only a little longer than one of these light lengths, never a little shorter. This helps reduce the costs of lighting, and optimizes the distribution of lighting throughout the entire tank.

### A Few Standard Fluorescent Tubes

Length (cm)	45	60	90	120
Power (W)	15	20	30	40

### Lighting

Probably, the single most important factor in determining the success of a planted tank is adequate lighting. The most common guidelines used in simple planted tanks is to leave the lights on about **10-12 hours a day**, and use at least **1 Watt of fluorescent lighting for every 2 liters** of tank capacity. So if you have a 120 liter tank you would need at least 60 W of fluorescent lighting (three 20 W, or four 15 W tubes). Another consideration is the type of fluorescent light. There are many different brands and types in the market, but any of the common "Full-Spectrum" or "Daylight" tubes (available in hardware stores) work well and are much less expensive than specialized tubes. Therefore, if you're willing to invest in specialized light that's great, but you can also choose to mix special and common tubes, or even use only common ones.



### Filtration

Although not impossible, keeping healthy plants with an undergravel filter (UGF) is not advised because this type of filtration impairs root growth and limits your choice of gravel and use of additives for the roots. If your tank is already set up with a UGF and you want to plant it, fine. Give it a try, and if you're not getting the expected results consider deactivating the UGF (this should be done carefully, especially if the tank's been running for a long time and there's a lot of waste accumulated in the gravel). But if you're setting up a new tank you should definitely give preference to external filters. For smaller tanks, **power filters** work very well and don't cost too much. For larger tanks, **canister filters** are excellent options. Wet-Dry and Trickle filters should be avoided because the enhanced contact of water with air will cause removal of dissolved CO<sub>2</sub>, and this is an important item as we will see below. A common guideline to help dimension filtration is to use one that circulates about **5 times the tank volume per hour**. So a 120 liter tank should have a filter that circulates about 600 liters/hour. Much less than that and toxins/waste may accumulate, much more than that and there may be excessive water movement, which plants don't like.

### Gravel

If your tank uses a UGF, you are limited to gravel with pebble size of about 1 cm or more, and cannot use additives on it because the filter removes them from the gravel and throws them into the water. Without a UGF, you have several choices of fine gravel and sand. Ideally, planted tanks should have a **5-8 cm layer of gravel with granularity of 1-3 mm**. If your intention is to create a natural looking aquarium, you should obviously choose a natural looking gravel (usually some shade of brown or grey). It should also be neutral, i.e., not interfere with the water's pH and hardness. Iron-rich gravel additives are highly recommended for the long-term growth of plants. Laterite is also an excellent option (a naturally iron-rich gravel).

### CO<sub>2</sub> supply

CO<sub>2</sub> is another essential factor in plant growth, because it's one of the basic ingredients for photosynthesis. CO<sub>2</sub> molecules dissolve very easily in water, and any aquarium will always have some amount of it. Depending on your setup (kind of filtration, water parameters, number of fishes, etc.), this natural amount may be enough to provide the plants with what they need, or it may be so low that it becomes a limiting factor in plant growth. In this case you need to artificially increase it with a CO<sub>2</sub> injector. There are highly sophisticated and expensive commercial injectors in the market, but for a beginner's tank there's a very creative and affordable solution: the **DIY CO<sub>2</sub> Yeast Reactor**. This is a homemade solution of yeast and sugar, placed in a tightly closed plastic bottle. As the yeast feeds on sugar, CO<sub>2</sub> is produced and injected into the tank with an air stone.

### Nutrients

Just like any other living being, plants need nutrients to execute their basic biological functions. The 3 most important nutrients for any kind of plant are nitrogen, phosphorous and potassium (**N-P-K**), so garden fertilizers are made with compounds containing these elements, called **macronutrients**. However, aquarium water tends to naturally accumulate large amounts of N and P in the form of ammonia, nitrates, phosphates, etc, and an excess of these compounds tends to cause a wide range of problems (fish intoxication, algae growth, pH fluctuations, etc), so aquarium fertilizers should only have high concentrations of K. Of course, several other elements are needed in smaller quantities but are also essential. These are called **micronutrients** or **trace elements**: Fe, Zn, Mg, Mn, S, B, and others. There are several good commercial aquarium fertilizers which supply all these nutrients in appropriate quantities, which you can buy and "feed" the plants just as you do with the fish. But there's an extra advantage that in general you'll only need to do this a few times a month, not every day.

**Setting up the tank**

Now that we've gone through the basic requirements, here's a step-by-step procedure to set up a simple, long-lived planted tank. Keep in mind that it is only a guideline...as it often happens in our hobby, there are several ways to do things right (and many more ways to do them wrong! :-)

Choose your tank, measure its dimensions and calculate its volume. Give preference to a tank with 30 to 45 cm in height. Wash the sides with an unused sponge and pure tap water. Place the tank in its final location, preferably where it will receive a good amount of indirect sunlight, but no direct sunlight.

Install fluorescent tubes and accessories on the hood, totaling at least 1 Watt for every 2 liters of tank volume. Choose the longest possible tubes that will fit inside your hood. Either use only "Daylight" type tubes, or change one or more of them to a specialized tube such as AquaGlo or Gro-lux, which favors plant growth and enhances the colors of many fish. If possible, keep the ballasts on the outside of the hood to avoid excessive heating, and install one switch for each kind of tube...it's nice to be able to control the amount and type of lighting at different times of the day.

Choose your filtration equipment, according to the suggestions above, and place it in the proper locations. If possible, give preference to two smaller, independent filters than a single larger one. It makes things easier for you and more secure for your tank - if one of the filters clogs or stops working you don't lose all of your filtering capacity.

Select your gravel and wash it thoroughly in tap water, until it no longer clouds the water. Fill the tank bottom with 3-5 cm of gravel. Add the appropriate amount of a commercial gravel additive and mix well. Then cover the mix until completing 5-8 cm of gravel bed. It usually looks better when distributed irregularly throughout the tank, or sloping down from back to front.

Fill the tank up to about half height with water. This can be dechlorinated tap water or, better yet, water from an established tank which you're sure is free of toxins and fish diseases. Most plants do best in waters with temperature between 20-28°C, pH between 6.4 and 7.2, and soft to moderate hardness. So these should be your goals.

Select your decorations - rocks, driftwood, treasure chests, whatever - and put your creative mind to work on the aquascaping. Keep in mind that anything you put in the back of the tank will soon get hidden by growing plants. A more detailed article with aquascaping tips will be available in the future, as well as a separate article on preparing driftwood for use in aquariums.

Fill up the rest of the tank and turn on the filters. The water may get rather cloudy right away due to the gravel, or in a few days due to a bacterial bloom. This is normal, just let the tank run by itself for a few days until things settle down.

If everything's going fine and the water is clear, you're ready to introduce your first plants! Once again, put your creative mind to work. Details about plant species and their characteristics can be found in the **Garden** section, here I'll just recommend that you select a few hardy and fast growing plants to start with - Hygrophilas, Cabombas, Vallisnerias, Sagittarias, Elodeas, Java Fern, and several others are good starters. Don't plant the entire tank right away...leave some room for other species you may want to add in the future. As your plants grow, you'll also be pleased to find yourself creating your own bundles out of cuttings, and re-planting them in your tanks or giving them to friends. When your initial planting is done, add a liquid maintenance fertilizer according to its instructions, and then continue using it in the recommended dosage and intervals.

After a couple of weeks, after your tank is cycled, it should be ready to add some animal life (if you wish, of course...but people rarely keep strictly plant-only aquariums). The number of choices here is simply too large to fit in an article or even in a book, and is mostly a question of personal preference. No need to say that you should choose critters that won't eat your plants...and the plant/fish compatibility issue is also a pretty broad. So again, the best you can do is look around, ask questions, read books, and learn from other people's experiences. A planted tank should ideally be sparsely populated, staying safely below the limit of 1 cm of fish for every 30 cm<sup>2</sup> of water surface, the most commonly accepted population reference.

You should soon begin to see algae appearing on the decoration, leaves, glass, etc. This is virtually unavoidable and actually beneficial to the aquarium, as long as it's kept under control, so it's a good idea to introduce some algae eaters to help you with the job. Some of the most popular ones are Pleco's and other Suckermouth Catfishes (stick to small ones, some get pretty big), Siamese Algae Eaters, Flying Foxes and other Labeo's, Platies and other Livebearers, and certain species of Snails and Shrimps.

After a couple more weeks you should begin your regular partial water change routine. How much to change and how frequently to do it depends on many factors, but most people will do 10% to 30% water changes every 1 to 4 weeks. It's always better to change smaller quantities in shorter intervals...as someone has already said: "**There's no such thing as too many water changes.**"

That's it. Sounds complicated? Troublesome? It really isn't. Trouble in aquariums is almost always the result of mistakes and misinformation on the owner's part. Hopefully these guidelines will help you make up your mind and take a dive into the wonderful world of planted tanks!



As previously mentioned in this Newsletter, I am happy to announce we have a LOGO!!! I will continue to use cute, funny pictures on the cover of our BRASS Bulletin, however our Logo (designed by Jeff Mountjoy) will be in every Newsletter. Thank you Jeff for your dedication and hard work on designing this amazing logo for us.

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