

ATOLL

The Journal of the Marine Aquarium Society of Toronto



Volume 23, Number 3 Spring 2010

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The Journal of The Marine Aquarium Society of Toronto

Marine Aquarium Society of Toronto

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Photographed by Mike McVicar.

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<http://www.MastCanada.org>

Ratified MAST Constitutional Changes

(underlined and/or in red)

4. Rights and Obligations of Members

1. Rights

Individual members, adult family members, honorary members, and life members, shall have the following rights:

- to attend all general meetings;
- to participate in MAST activities;
- to receive the MAST journal;
- to stand for election to the Executive, provided they meet the requirements of Section 5.2:
- to vote in Executive elections, provided they meet the requirements of Section 5.2; and,
- to vote on any matter put before the membership.

Family members who are children shall have the same rights as individual members except that children shall not have the right to stand for election or to vote.

5. Executive

1. Composition

The Executive shall consist of seven Directors: a President, a Vice-President, a Treasurer and four other Directors.

2. Elections

The Executive shall be elected by the membership at each annual general meeting (AGM). AGM's will be held at intervals of no greater than fifteen months.

At each AGM, there shall be four elections, in the following order, for: President, Vice-President, Treasurer, and four additional Directors.

Each candidate for election must be a MAST member who has been in good standing for at least 90 days prior to the AGM.

Each candidate must have been nominated by two other MAST members in good standing and the nomination must have been conveyed in writing any of the current MAST executive board at least 40 days prior to the AGM.

To be eligible to vote, a MAST member must have been in good standing for at least 30 days prior to the AGM, and must be in attendance at the AGM by the start time specified on the notice of meeting.

Each member eligible to vote in good standing, who is present in person, shall be entitled to cast one vote in each of the first three elections; and up to a maximum of four votes, each for a different person, in the last election.

The candidate with the most votes in each of the first three elections, and the four candidates with the most votes in the fourth election, shall be elected.

~~Any adult member may run for office.~~ Unsuccessful candidates are not barred from running for other positions.

Voting shall be by secret ballot. No voting by proxy will be permitted.

The term of office of the Executive shall be from one election until the next election

MAST By-laws:

4. Membership Meetings

Members shall be notified at least 60 days in advance of the time, date and location of the Annual General Meeting.

Members will be notified when a Constitutional change is being recommended by the Executive, and will be notified in advance of the time, date and location of the meeting at which the change will be considered by the membership.

The Secretary and Membership Director will jointly ensure that a membership list and ballots are available at any meeting at which a membership vote is planned.

If the Executive establishes or revokes any Bylaws, such changes will be brought to the members' attention, at the next membership meeting.

5. Notice of Nominations for Office

Any and all Executive members who receive notification of a nomination for an upcoming election shall inform the President and entire board of directors within three days of receiving the nomination. Notification may be made in writing via email or in person during an Executive meeting and recorded in the minutes of said meeting. If email notification is employed, the sender must request notification of receipt by each recipient to ensure delivery.

**** The entire constitution can be viewed on the UPDATED MAST website ****

www.mastcanada.com

Part 2 - Securing Propagated Corals: Methods of Fixing Live Coral to Hard Substrates

By Anthony Calfo

Natural Attachment

Natural attachment is defined here as the encouragement of unassisted, or at least unimposed, attachment of coral tissue to natural or artificial substrates. Substrates for securing corals naturally are about as varied as one can imagine. Some popular surfaces include live rock, crushed live rock, bio-rubble, crushed coral, various grades of aragonite sand, snail and clamshells, and ceramic tile. Parent corals with little or no tolerance to handling or propagation can be established instead in a dedicated rubble trough and encouraged to grow out to maturity. In time, they will begin branchlet dropping or may permit limited asexual fragmentation. Successful divisions can then simply be dropped to the floor of the rubble trough for settlement and growout. In my opinion, it is one of the very best methods of attaching coral fragments for coral farmers who can afford the time and space to conduct the activity in dedicated culturing vessels.

One of the very best materials for securing divisions in coral propagation by natural attachment is "bio-rubble". Bio-rubble is the inevitable by-product of live rock imported and shipped domestically. Very small pieces of this scleractinian product occur in small to significant quantities in shipments of live rock that move into and about the country every day. It is not uncommon for up to 10 percent of a shipment of live rock to be crushed or broken into small or tiny pieces that are useless for the collected purpose of rockscaping. Since this bio-rubble is too small to use for decorating, but too large for

use as filtration media (it traps detritus excessively without effective pre-filtration), it is usually discarded by importers and other resellers of live rock. Aquarists are encouraged to court local resellers of live rock products for such rubble that may be used in coral propagation for local trade. In many cases, a kind retailer may be inclined to save the fragments of live rock from weekly shipments for local coral farmers to use in exchange for considerations on supplied, propagated coral. In any case, bio-rubble should be available inexpensively, as it has little or no other market value. The caveat for this practice is directed towards international shippers of propagated coral. To send propagated coral out of the country soon or in the future, it may be necessary to culture reef invertebrates on conspicuously artificial substrates instead to demonstrate the captive bred nature of the product in the face of increasing legislation on the trade of wild harvested and CITES protected stony corals.

Having described some of the most popular methods for securing propagated corals, let me offer some wisdom in a general overview of the activity:

Know Your Invertebrate's Tolerances...

There can be a tremendous range of tolerance and sensitivity to various aspects of coral propagation regarding handling, cutting and attaching corals even among species within the same genus. Research a candidate thoroughly when information is



Bio-rubble filled growout containers in Dick Perrin's coral farming wonderland, Tropicorium... Romulus, MI.

possible about such techniques, and report your findings when such information is not available. Please give your knowledge as freely as you take it.

Reduce Handling Time to the Barest Minimum...

Avoid touching live coral tissue whenever possible and wear a clean glove when it is not. Increased handling time decreases survivability by mitigating deleterious factors (increased mucus production, creating abrasions or wounds that invite infection, etc.)

Do Not Move Secured Divisions in Growout Frequently...

Frequent movement of new/unsettled divisions, especially on a vertical scale, dramatically increases the risk of mortality. Put a fragment in a good and secure place for growout the first time and leave it alone! Movement of a young and stressed division that forces the expenditure of limited and strained sources of energy to compensate

for changes in lighting and other life supporting parameters is dangerous and irresponsible.

Never Place a Fragmented Division of Coral in Brighter Illumination Than the Parent...

Asexually fragmented divisions demonstrate higher survivability if attached to a substrate for growout at a level of illumination that is the same or slightly lower than the donor. Lateral moves within the system are generally safe. Such propagation

is especially easy to accomplish in dedicated systems for coral farming with deliberate shelves or static water depths for the terrain (like a monospecific rubble trough for parents and cultured divisions).

Minimize Physical and Chemical Aggression in Growout...

Most propagated divisions of coral will attach and growout more successfully without competition from neighboring coral/cnidarians. Farming that must be done in mixed species displays can reduce the impact of chemical aggression by propagating only one or just a couple of species at a time. Otherwise, numerous specimens/species of freshly cut corals will dramatically increase the "toxic soup" from the inevitable duress. Ideally, farming corals is to be done in monospecific displays where specimens cannot touch each other. Aggressive protein skimming, chemical filtration and water exchanges are necessary and critical to reduce complications, not the least of which will be from allelopathy.



Fragments Permitted to Attach Naturally Should Be Placed "Face" Down...

Simple divisions of corals attach best if healthy tissue is placed downward (believe it or not) in contact with the intended substrate for settlement. Damaged tissue and exposed skeleton should be oriented upward to receive optimum light and current for expeditious healing. The colony will soon grow to a natural shape with available light and water flow.

Parting Thoughts

When selecting materials for use in coral farming, please be conscientious that you should be utilizing items with the lowest possible environmental impact. When using plastics, try to employ materials in techniques that are re-usable (releasable cable ties, slip knots on constrictive ties, even asking your friends/customers to send back floral picks, etc. that will not be recycled). This is especially important for larger farming operations with consideration for the burden already placed on limited resources, when recycling will obviously contribute to profits on the bottom line. Live rock and dry ancient reef rock ("tuffa"/carbonate rock from land) hardly qualify as low impact materials. Indeed, limestone/aragonite for making ce-


ment plugs and the like are also products of a defined, limited and non-renewable resource: ancient reef deposits. Whenever possible, utilize inevitable byproducts like bio-rubble from live rock shipments or recyclable plastics.

There are many ways, of course, to practice responsible aquariology. People must necessarily exploit natural resources, but it can be done responsibly and with consideration and great empathy. I present this as a challenge especially for aquarists and other consumers of coral reef aquarium products who intend to fill their displays with mostly or only captive propagated specimens. Indeed, low impact systems are becoming common, and I suspect that zero-impact reef displays will be an everyday reality in the near future. The progress that aquarists have made in just a matter of years... barely decades, from the perception of live corals from being mysterious and impossible to sustain in captivity to a point now in time where their overgrowth has become an issue in husbandry is testimony to the passion and dedication of reef enthusiasts. I wish the best of luck to you in all of your honest endeavors.

With kind regards,

Anthony Calfo

About the author:

Anthony Calfo is a life-time aquarist and hobby author, having published books and numerous articles on aquatic science and aquariology. He has presented lectures and workshops to organizations and events for more than a decade and can be reached daily for comment and questions on message boards around the world. For books or more information, you can find him at <http://www.marinedepot.com/FORUMS/> 

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The Marine Aquarium Society of Toronto

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2:00 - 3:30 p.m. (doors open at 1:30)

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Jennifer Lash is the founder and Executive Director of Living Oceans Society, Canada’s largest marine conservation organization. Jennifer’s background is in Public Policy and Administration and she has worked on ocean conservation issues in British Columbia for many years. A lifelong love of the ocean led Jennifer to Australia where she worked on a prawn trawler. The destruction she witnessed during this experience changed her life completely, and inspired her to work for the sustainable health of B.C.’s ocean and the communities that depend on it.



Jennifer is coordinator of the Coastal Alliance for Aquaculture Reform and a founding member of the Oil Free Coast Alliance. She also serves on the Board of the Canadian Committee of the International Union for Conservation of Nature (IUCN). In 2002, the Tides Foundation presented Jennifer with the Jane Bagley Lehman Award for Excellence in Public Advocacy. Jennifer lives in Sointula, a remote fishing village on Malcolm Island, with her nine-year-old twins. Her work often takes her from her island home, but she is driven by her passion for the coast and her belief that she is building a better future for her kids through the successful work of Living Oceans Society.

MAST members \$ 5 Non-members \$10

Carruthers Creek Finds Nemo

By Constantine Ioannou



It seems like only yesterday when I saw Finding Nemo for the first time, and yet it still seems to be as popular as ever seven years later. In fact, my kids were not even born when this animated movie was first released and still it is a favourite of theirs as well. How many of you have had children examine your home aquarium and start screaming "Nemo" or "Dori"? This is not just something that kids only do, but amusingly many adults as well. It's this kind of Nemo fever displayed by my children that prompted me to set-up an aquarium in my daughters Elementary School, Carruthers Creek.

Over the Christmas holidays I was trying to figure out what would be the best size aquar-

ium to set-up in my daughters Jr. Kindergarten classroom. There were a few factors that would influence my decision. One of them being that this tank would not be able to be serviced over the summer being the school would be closed. It had to be something small enough for an easy tear down. I decided to go with a Tetra 10 gallon aquarium that came with a filter, and a 24 watt florescent light fixture. I already had some equipment lying around, so I was able to throw in a 50w heater. The only other equipment purchase was a Hydor Koralia Nano Powerhead for a nice steady flow.

I had made arrangements with my daughter's teacher on the location where we would set-up the aquarium. We decided the best place

would be on a counter beside a sink which would serve as an excellent location specifically around water changes. The following week I headed for Caruthers Creek Public School with the aquarium, live rock, sand, five gallons of saltwater from my 3 year established nano, and another five gallons of freshly mixed saltwater. I tried to set-up the aquarium over the children's lunch period so I would not be a distraction to the class. All I needed was an hour to complete the task and have a decent looking aquascaped tank. Now because I used established live rock and water from my existing nano, I jumped started the entire cycle stage and could start adding livestock, but just to be safe, I waited about 2 weeks just to monitor the parameters and make sure everything was 100% ok.

During the two week settling in period of the newly set-up 10 gallon aquarium, I went online to Canada's largest Marine forum, Aquarium-Pros.ca to try and get some livestock donations from the registered Marine community. I received an incredible response from many members offering fish, corals, snails, crabs,



starfish, etc. With all these donations, I had to be selective on what I could accept given that the aquarium was only 10 gallons, with limited lighting and I did not want to overstock. I made arrangements with a few members and carefully planned what would be the first livestock entries.

Throughout this settling period, my daughter and her entire Jr. Kindergarten class were bubbling with excitement on the arrival of their new friends. The day finally arrived. I made my way to the school with a Styrofoam container of goodies. I acclimated a baby green chromis, some astrea snails, hermit crabs, and a few assorted coral frags ranging from zoos, mushrooms, and a torch coral. The corals responded very well and opened up immediately, and the chromis settled in nicely. The children huddled around the tank trying to sneak a peak of the new life that joined their classroom. Everything seemed perfect, but something was



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Notice of MAST Annual General Meeting

The MAST AGM will be held at 7:30 p.m. on Wednesday, June 9, 2010.

It will be held at the Hillcrest Library, 5801 Leslie Street, Toronto.

The agenda will be:

- Approval of minutes of the last General Meeting
- Presentation of the financial statements
- President's report
- Election of Officers and Directors
- Any other business
- Adjourn

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missing. My daughter nudged my leg pulled me down and whispered into my ear "Dad... where's Nemo?"

Prior to setting up the aquarium, I had made arrangements with a fellow reef hobbyist who also bred black clown fish to donate two of his little guys. Because he lived outside of Toronto, we could not really establish a scheduled meet until he came down for business. Since I did not know when he would come and the children were growing impatient, I was able to pick up 2 clown fish from a local wholesaler, as well as a fire shrimp. After acclimation into their new 10 gallon home, I finally got the thumbs up of approval from the children. They were so excited. The class had names picked out for them. The clownfish were named "Nemo" and "Friday", and the Fire shrimp was named "Speedy".

Being only 10G in size, I wanted to make sure that a 25% water change was done weekly to avoid nutrient build up and also to keep a

nice pristine looking tank. Three days a week, I went by the school to check on the system. The aquarium was covered so evaporation was minimal; a little manual top-off did the trick. Mrs. Poray –Taylor, the classrooms teacher fed the tank daily since I was not able to make it their everyday. The only time the fish were not being monitored was the weekends. Sadly there was 2 occasions where I came by Monday morning and little Friday and Nemo had passed away. The children's version was that they went for a vacation to the Great Barrier Reef. Various water tests and experience, told me that it was not a water quality issue, or even a biological establishment issue. The snails, crabs, and even shrimp which are more sensitive to water quality were all doing great. I assumed the fish that I acquired were not in the best condition as they were picked up a day after arriving from a long shipment and were probably under much stress. I made arrangements to pick up a 3rd pair of clown fish, and then I got an email from the fellow clown fish breeder I was talking about earlier with the black clowns. We made

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arrangements and he brought me two feisty black clown fish that looked excellent in health. Now you would think it's pretty easy to fool a 4 year old...right? How wrong you are my friend. (Not quite.) After failed attempts trying to explain to the kids that I was bored and decided to paint the last pair of clown's stripes from orange to black, they caught on and decided to re-name the fish to Nemo and Friday the second. I'm proud to say that the tank is thriving, the fish and corals are healthy, and the children are thrilled.

The timing in setting-up an aquarium in my daughters Jr. Kindergarten class could not have been better. Mrs. Poray-Taylor's theme for the year is "Oceans". What better way to grasp the theme than to have a little piece of the ocean right in your classroom. If there is anything I can take from this (other than witnessing my daughter's classroom enjoying their little ecosystem) it is that I just may have planted seeds for some future marine biologists or at the least, some future MAST members!

- Constantine 🐠



Carruthers Creek Jr. Kindergarten class

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