

A NOTE FROM THE EDITOR

Reefers,

In the past month we had one of our biggest events of the year. The Big Bird Port Aransas Collection Trip. With special guest Bob Fenner. To much of the members delight all events during the trip were very educational and entertaining to say the least. Mr. Fenner's presentation being one of them. His presentation included collecting different species in their natural habit, the effects of using poison such as cyanide. The presentation also included the do's and don'ts of collecting out on the jetty. We were glad to have Mr. Fenner out collecting with us later that evening out on the jetty. A special thanks to Steve & Cheri Byrd for organizing such a successful event. Many members are looking forward to next year.

- Eve -



OrinonN- August Picture of The Month Winner

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Need Article

NEW ELECTED BOARD MEMBERS:

We would like to welcome our newest members of the Board of Directors Michael Metts (LoneStar), Rob Bernhardt (Mr. Cob), Jack Watkins (Tx8v8r) and Jennifer Prince (Princer7). Congratulations. We look forward to working with you in the near future in making MAAST a place to enjoy.



A Step by Step Guide for the New Reefer

Here is some very helpful information for the new reefer. This will help you in getting your new reef system up and running.

A Step by Step guide for the new reefer..

Author: Unknown

The first thing you will want to do is to get a notebook. Write down everything you have in mind. Ask yourself:

A. What size tank?

B. How much filtration will I need? (the entire volume of water should be turned over at least twice per hour)

C. How much substrate will I need? (a good amount is a 1.5 to 3 inch depth)

D. How much live rock will I need? (plan on spending at-least \$5.00 per gallon capacity minimum depending on density of rock purchased. Chances are you will want much more. Don't skimp here or you'll be sorry later!)

E. What type of lighting will I need? (depending on what organisms you are interested in keeping, you should only consider High Output T5, Metal Halide (MH), Power Compact Fluorescents (PC's), or Very High Output Fluorescents (VHO) if you are serious about keeping a nice reef aquarium. Some individuals might recommend standard 40 watt fluorescent bulbs but this is a bad idea in most cases unless used on a shallow tank or one in which a very minimal selection of non-intense light requiring organisms will be kept.

F. What size skimmer will I need and what type? (while we don't use skimmers on our personal tanks, we do set them up on newly established aquariums for at least 6 months or so. This is more of a safety precaution than anything else and will allow for a much larger error rate than without one as well as cutting back the waiting time considerably)

G. Ask yourself: Do I really want to spend this much money? Remember, this is just the basics. If you don't want to spend the cash, then it's time to move on to a fish-only setup or to a nice freshwater aquarium. If you still are set on setting up a reef but can't really afford it, then slow down and take your time gathering the proper equipment. Don't skimp on equipment. Look around on the internet for aquarists selling used equipment that is still in good shape. Look in the classifieds in the local newspaper. You will be amazed at what you will find. We purchased a 300 gallon aquarium for \$100 dollars which we found in the newspaper!

Step Two

The Tank: Basically there are three types of aquariums available. Acrylic, Glass, and wooden with a Front Glass Panel (the last best avoided for reef aquaria).

While acrylic is light and strong as well as easily drilled, it scratches very easily (especially when scraping algae or diatoms) and often turns yellow with time. For this reason, we recommend a glass aquarium. (though the decision is still yours) If you do go the glass route, try to find one that is made out of non-tempered glass. This will allow it to be easily drilled if you decide to do so later down the road.

The size of the aquarium is the next question to be answered. Basically, the bigger the better. The larger the aquarium, the more forgiving it will be when you make a mistake or don't catch a problem right away. A good starter aquarium should be at least 45 gallons.

The Stand: This part is probably one of the least important aspects of keeping an aquarium. Basically, it should be sturdy enough to support twice the weight of the aquarium when full with water. If you are interested in building a stand, take a look at our plans. You might also want to ensure that the stand provides enough room underneath for other equipment.

Pumps and Power heads: While turning over the entire volume of water at least twice per hour is important, one must remember that current should be evenly distributed throughout the aquarium. A good pump with at least 3 water returns pushing medium current should suffice. If not, you might want to consider the purchase of a couple of power heads.

Heater: In larger aquariums, a heater is hardly needed if one can keep the room temperature consistent. If you are set on using a heater or are keeping a smaller aquarium, you might want to purchase two or three small heaters vice one large one. This will help protect from heater failure which most likely will happen sooner or later.

Skimmer: Quality is important here. Use a well known reputable skimmer brand and make sure it is too big for your system. That is right - I said too big. If your system is 55 gallons, you should try to get a skimmer rated for up to 100 gallons or so.

Lighting: The most intense lighting would probably be in the form of Metal Halide lamps. We recommend MH with supplemental VHO or PC's for additional actinic blue lighting. Look around, do some research to decide what lights are best for you. By now you should have a basic idea of what type of organisms you will be keeping.

Misc. equipment: Other equipment you will need are:

- A Hydrometer
- Kalkwasser Dripper
- Various test-kits (ammonia, nitrate, nitrite, Ph, calcium, phosphate)
- A magnetic Glass Cleaner (optional though useful)
- Reef aquarium epoxy (for mounting corals as well as rock-work)

Step Three

Setting up the tank: Now that all the basics are in place, you can setup the aquarium. Ensure that it is in an ideal place, away from heavy drafts or intense sunlight which might overheat your aquarium. Ensure that all electrical outlets are located in close proximity for

Writer's for the newsletter committee.

We need writers!

Now, a lot of you think you can't write an article - but we're not only looking for advanced topics here - we need beginners stories, tips, product reviews, and more!

Send us your thoughts any and all are welcome.

Looking forward to hearing from you..

Sincerely
The Newsletter
Committee.

What is the Nitrogen Cycle:

Continued from Page 2

The nitrogen cycle of an aquarium is a chain reaction in nature resulting in the birth of various types of nitrifying bacteria, each with their own job to do. Each new bacteria born consumes the previous one, and in turn gives birth to the next bacteria.

The three components involved to make this happen are ammonia (NH_3 or NH_3+4), nitrite (NO_2), and nitrate (NO_3).

In general the nitrogen cycling process usually takes about 30 days, but there is no exact time frame for this process to complete its task, as each aquarium is different. Factors such as how many fish, other livestock, and organic matter is present in the tank can vary the completion time, one way or the other.

Testing your aquarium water during cycling is very important, as this will tell you what phase the aquarium is in at any given time throughout the process.

ease in setup. When finished, you should have all equipment in place though not turned on. We recommend a standard computer-type power box for controlling all equipment instead of a direct outlet or power-strip. Ensure that all water return is set in a good position to provide good water circulation. Ideal would be at least one return from each side as well as one return near the center of the aquarium which delivers water directly into top of water column. This will help avoid surface slime from developing. Follow manufacturer's instructions for setting up all other equipment. Feel free to contact us with any questions.

Water Source

Find a reputable manufacturer of aquarium salt. Some choices include:

- Instant Ocean
- Reef Crystals

Follow manufacturer's instructions though always prepare 24hrs in advance. Synthetic salts often raise significantly in salinity after freshly mixed. We recommend at Specific Gravity of 1.025 - 1.027. Many authors recommend levels much lower though we find this target to be of the most beneficial.

Fill tank 1/2 full with fresh seawater mix. Ensure that you have enough prepared to fill the remainder of the aquarium after addition of rock and sand. Do not attempt to turn on equipment until tank is completely full.

Live Rock/Sand

The purchase of live rock and sand is not an easy one nor a cheap one. You should expect to pay anywhere from \$4.00 - \$8.00 per pound of live rock or live sand depending on location and grade of rock. You will need plenty of live sand though only half of what you will need for the aquarium should be purchased as live sand. The other half should be a dry aragonite mixture supplied by your local fish store. This mixture will give the best overall long-term results.

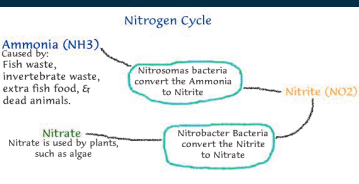
Try to get as wide a variety of rock as possible (our favorite being Tonga rock due to its branchiness) This will present a wide variety of organisms later down the road. Stay away from "base" rock as it is basically standard rock or dead rock which has been placed in seawater. While it may hold some live and beneficial bacteria, it hardly compares to the real thing. Once again, don't skimp here! If you can't afford it now, you can always add more next payday! Look for sizes that will easily shape with others in your aquarium's size.

When placing the sand, just dump it on in (aragonite first). Don't worry about the water getting cloudy. It will have plenty of time to settle. Next, begin to construct the rock-work remembering to provide as many caves and crevices as possible but don't forget to provide lots of flat areas to place your specimens! You can use epoxy, stainless steel wire, or even plastic ties to form wonderful rock formations. Take your time and don't worry too much about taking too long. Just keep at it until you are satisfied.

Once everything is in place, you can top-off the aquarium with water and turn on all equipment. Don't be surprised if your skimmer doesn't put out too much right away or even if it puts out what may seem excessive. The aquarium will eventually stabilize.

Now for the hardest part.....waiting. Your aquarium will take anywhere from 30 - 50 days to properly establish in which time, the lighting cycle should be on a 12 on 12 off schedule. Don't worry about adding any additives and definitely don't add any livestock. The live rock and sand will successfully cycle the aquarium.

As time goes by, your tank will experience an ammonia spike followed by a nitrite spike



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which will be followed by a nitrate spike. When the nitrate spike has reach acceptable levels (30 - 50 days) your aquarium will have "cycled". Don't mistake this for being established. Establishment will come much later down the road however, you can now add a very limited level or organisms which should only include 1 hermit crab and 1 snail per gallon as well as a maximum of one fish per 30 gallons. (you will be able to add additional hermits and snails down the road as tank becomes established) Don't attempt to add any other invertebrates as the aquarium is not yet stable enough to support them. Keep an eye on all parameters each week.

Once a week you should check the following:

- specific gravity (more often in smaller aquariums)
- Ammonia
- Nitrite
- Nitrate
- Phosphates

Each week thereafter, if all basic pars are in good condition, you can safely add one specimen (hardy ones only for first 6 - 8 months). If properly cared for, your aquarium should become "established" in 10 - 14 months.

Supplements

Most aquarists make the mistake of over supplementing there aquariums. The amount of supplementation you will need will depend on livestock levels as well as water changing routine. We recommend adding B-ionic as directed as well as dripping kalkwasser daily. Frequent additions of iodine are also recommended though this may not be needed in aquariums with decent water changes.

Maintenance

Daily Maintenance:

- Check Specific Gravity (in larger aquariums this may not need daily)
- Check Temperature (recommended to be kept at 78 - 82 degrees) Keep stable!
- Add kalkwasser (drip slowly throughout the day or night)
- Check all equipment (a visual spot-check can catch a big problem)
- Feed (feed all fish though this might not need done in lightly stocked tanks)
- Check skimmer (dump the collection cup if needed)

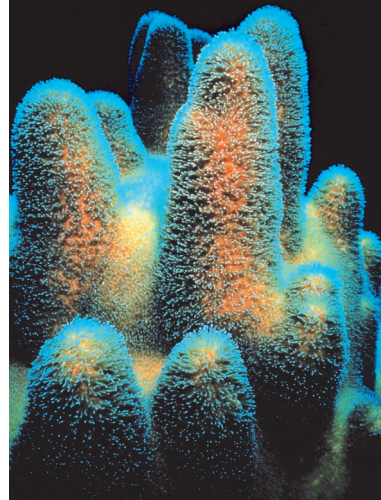
Weekly:

- Perform a small water change (can be done less frequent though weekly small changes can really help to keep things turning over) 5% a week is a good amount to replace.
- Clean interior glass of algae growth
- Clean any pre-filter material
- Clean salt creep

Monthly:

- Remove and clean all heavily soiled equipment.
- Note: remember to read, education is the key!

Nitrates are generated by from the metabolic wastes of invertebrates, fish, and bacteria and are highly toxic to your tank. The level should be as close to zero as possible. Hiatt's RN! and tri-pelleted activated charcoal will eliminate the harmful compound. Knowledgeable aquarists recommend using a charcoal-filled flow tube with your filtration system, making sure water and air flow freely through the tube.



PH Levels

(power of hydrogen)

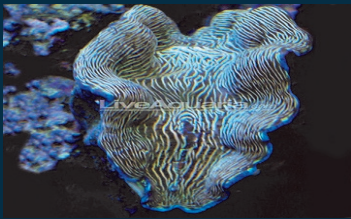
The pH level in a saltwater aquarium is a constant concern to most aquarists. Whereas the occupants in a fish-only system can tolerate a fairly wide range of pH levels for periods of time with no major harm, the occupants of a reef tank rely heavily on a constant pH level in the right range to just survive, let alone thrive. The generally accepted pH level in a basic saltwater system is between 7.6 and 8.4. A pH of 7 is considered to be "neutral", neither acid or alkaline, while pH above 7 is alkaline or "base", and below 7 is acidic. Reef tanks are a more sensitive, and therefore need to be kept at the higher end of the pH scale, 8.0 to 8.4.

EYE ON IT Species Spotlight

The Derasa Clam is also referred to as the Southern Giant Clam or Smooth Giant Clam. The latter name refers to the relative lack of ribbing and scales on the shell. The smoothness of its thick shell, and the 6-7 vertical folds helps to differentiate its species from *T. gigas*, its larger relative which is not as smooth and has 4-5 folds.



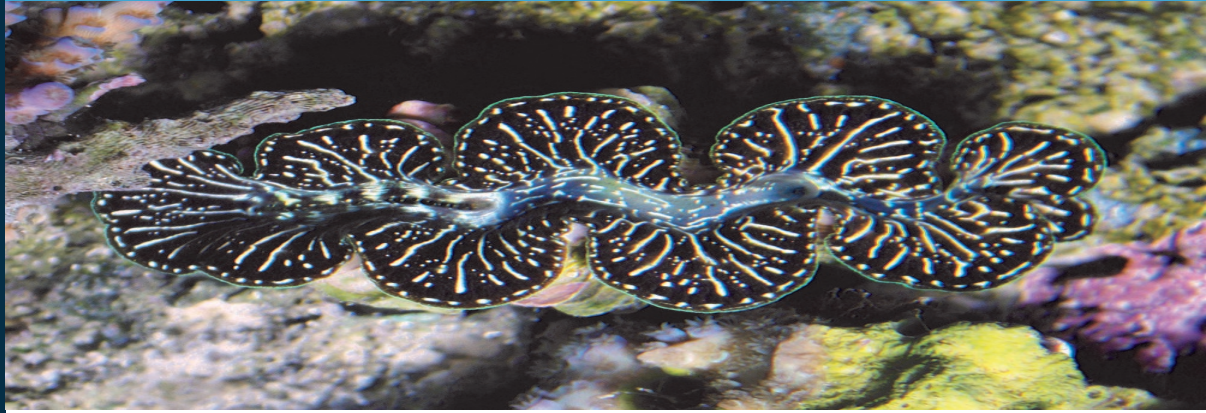
In an aquarium, however, scutes may develop on the Derasa Clam. Its mantle is a mixture of orange, yellow, blue, and black and white, and usually has a wavy striped or spotted pattern, usually with vivid blues and greens. It has a narrow byssal opening and the incurved siphon has tentacles. This species is one of the largest of the "giant" clams, and grows rapidly, reaching a maximum size of approximately 20 inches. Under the proper conditions, smaller Derasa Clams can double or triple their size in less than a year. Those in the aquarium trade are usually cultured.



The Derasa Clam is the most widely available and hardy of the Tridacna clams. It needs bright lighting supplied by intense fluorescent or metal halide lamps to live, grow, and keep its bright colors. The type of lamp will depend on the depth of the tank and the position of the clam. A daylight fluorescent tube is also recommended.

The Derasa Clam requires calcium levels of 400-480 mg/L, and an alkalinity of 7 to 12 degrees. Proper levels of strontium and iodine are also needed. The Derasa Clam relies heavily on the photosynthesis of the zooxanthellae cells growing in its mantle. However, all clams also require micro foods designed for filter feeders, especially when small.

Information/Photos were compiled with permission from www.liveaquaria.com.



<u>September 20th</u>	<u>October 24th</u>	<u>November 7th</u>	<u>November 14th</u>
Presentation By Peter Kordelski (Ping)	Halloween Frag Party	Sea World Event	MAAST Tank Tour
Bass Pro Shop	5pm-?	Details TBA	Details TBA
2-4pm	Mr. & Mrs. Z28Pwr		
	San Antonio, TX		

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This Month's Aquaria Q&A ...

Q: Why Are Coral Reefs Important To Humans?

Coral reefs are among the most biologically diverse ecosystems on earth. Second only to tropical rain forests in the number of species they harbor, they are sometimes called the "rainforests of the sea". Although coral reefs only occupy about 0.07 percent of the ocean floor (an area roughly the size of Texas), they are home to as many as one quarter of the world's marine species. Coral reefs offer important income sources for their human neighbors through tourism and fishing, which provide both subsistence and trade. Recently, scientists have begun to discover that coral communities may contain valuable medicines that may one day lead to treatments for cancer and HIV. For coastal communities, coral reefs also play an important role in protecting their coastlines from storms.



BECOME A CHARTER MEMBER TODAY

Membership

Dues are \$25 for the calendar year. These dues quickly pay for themselves by the discounts given that many local stores honor to MAAST members.

We are trying to make our club better, bringing more educational topics, more door prizes and raffle items, and guest speakers. We also have the routine maintenance items like the website, food for meetings, membership dues to national marine organizations, and print/publication fee's. Membership dues allow our club to keep afloat and make all of this possible. As always, the website portion of the club will remain free.

Why collect dues?

1. Keeps MAAST afloat.
2. Funds club meetings so host does not have to pay for all out of pocket.
3. Allows for an image gallery on MAAST website.
4. Extra funds go into pool for "expert" speakers at the meetings.
5. Higher quality raffles, higher quality meetings, higher quality club!
6. Eligibility to run for a club office or be appointed to a committee.
7. Eligibility to VOTE!
8. Discounts at participating LFS's and online vendors.
9. A membership card
10. A voice to represent aquarists' interest.

For more information concerning Charter status, please read our By-Laws.

The membership dues are \$25.00. Payment can be made either at the meetings, online via PayPal, or with a check mailed to our PO Box below

PayPal fee's can be sent to treasurer@maast.org

or via snail mail to:
MAAST
P. O. Box 780582
San Antonio, TX 78278

Please include name, sign-in name, e-mail, home address, and phone!

Thanks for everyones help and support with this great organization!

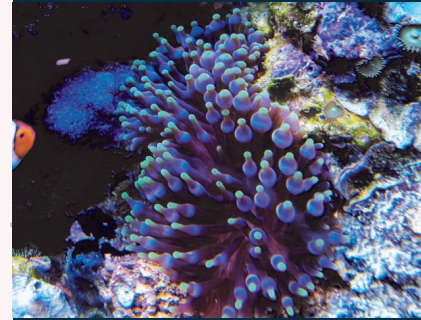


PHOTO CREDITS

P1 - POTM Winner- OrionN

P2 - Tank Shot
www.copyright-free-pictures.org.uk

P4- Acan Shot-G-ray

P5- Pillar coral, *Dendrogyra cylindricus*

[Wwww.Wilipedia.com](http://www.Wikipedia.com)

P6 - Derasa Clams
www.ReefCorner.com

P6-OrionN- Clam Shot

P7- Purple BTA Anemone JimD

Helpful Tips:

Optimum Levels

pH	8.1 - 8.3
Specific Gravity	1.026
Alkalinity	8 dKH
Calcium	450 ppm
Magnesium	1350 ppm
Nitrate	0
Phosphate	0 - .01 ppm