REEF HOBBYIST MAGAZINE

FOURTH QUARTER 2014 | VOLUME 8

SHRIMP GOBIES FOR NANO REEFS

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FRAGGING *TRACHYPHYLLIA*

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* Villa, B. Rico, Le Coz, J. R., Mingant, C., and Robert, R. (2006). *Aquaculture*. 256, 377-388.

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FEATURES

34 ON THE COVER

SHRIMP GOBIES FOR NANO REEFS

Have you ever wanted to keep a shrimp and shrimp goby pair? Albert Thiel, an internationally known author and hobbyist, shares his fascination with these fish and their shrimp partners, including valuable care and compatibility information in this must-read article.

FOURTH QUARTER 2014 | Volume 8

ANNOUNCEMENTS

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(latest issue available at these events)

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- **Mid-Atlantic Marine Aquarium Expo:** October 18, Virginia Beach, VA – midatlanticmas.com
- **Reef-A-Palooza:** October 25-26, Costa Mesa, CA – reefapaloozashow.org
- **Florida Frag Swap:** February 7, 2015, Tampa, FL – flfragswap.com
- **OSRAS Reef Conference:** April 19, 2015, Warwick, RI – osrasconference2015.com

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NEW PRODUCT SPOTLIGHT

Trachyphyllia geoffroyi

RUSSELL VANDER ENDE

FRAGGING *TRACHYPHYLLIA*

Most of the hobbyists that I've encountered over the years have been quite squeamish, or at least hesitant, to fragment their fleshy, delicate corals. Hopefully, what I share here will boost the confidence of those individuals and others like them. I have a firm belief that all species of coral can be fragmented and, where possible, should be for several reasons. First of all, it's conservative because it reduces the need for collecting wild specimens. Secondly, you could consider it loss prevention through duplication because having a copy of one of your prized corals in another person's tank may allow you to reclaim a piece following a system crash. Thirdly, selling frags from your overgrown colonies can be a modest income source and help to reduce the cost of this expensive hobby. Finally, there is virtually no risk involved with many specimens, especially those that grow rapidly to massive sizes or prolific populations.

Most people who have dipped a pair of clippers or a blade into their tanks are familiar with fragging easy corals like *Acropora*, *Montipora*, branching *Euphyllia*, *Caulastrea*, *Capnella*, and *Xenia*. But when we start to get into some of the fleshier soft and LPS corals, some people don't think they can be fragged. They worry that the coral could lose all of its organs through the cut area, won't be able to heal, or might become infected and dissolve away into nothing.

So here I have a very fleshy *Trachyphyllia* that neither snaps in half nor cuts with a razor blade. I purchased this coral around 2007 and first decided to frag it in 2010. I've been playfully cutting up coral since 2004, so I've accumulated quite a few tools over the years. For this session, I decided to use a diamond blade band saw because I wanted a nice clean cut through both flesh and skeleton. Typically, these saws are used to cut glass, marble, and other hard materials, but now there is a version for reefkeepers that is more resistant to saltwater. My band saw has a liquid-cooled, fast moving, thin abrasive blade; and unlike a tile saw or rotary tool, it doesn't sling coral goo all over the house.

With some saltwater in the saw's reservoir and the blade speed set as high as it goes, I ran the coral through (right down the middle) and then immediately returned it to the same location in the tank. This specimen handled the cut exceedingly well, so well that it didn't even deflate through the whole process. But the best part was the rate at which the coral healed itself afterwards. As you can see in the pictures, within a matter of weeks, the cut area closed itself off and began to take on a more uniform appearance. Some of the other species of LPS that I've cut have taken much longer to heal or regain their original shape and uniformity. But all of them have recovered eventually.

Minutes after cutting, the coral is returned to its usual spot.

One week later, the coral is healing nicely.

After 2 weeks, the coral's mouth has closed all the way around.

In only 3 weeks, the coral is beginning to regain its former shape.

In less than 2 months, the mouth is fully functional and able to consume a silverside.


My 120-gallon full tank shot.

I have a few rules that I like to follow to ensure success whenever I frag any type of coral.

• First, only fragment healthy, growing, and well-established specimens. Then return the pieces to the same conditions from which they came.

• Allow for adequate water flow all around the cut areas of the coral to aid in healing. Observe everything closely during and after fragging for signs of any problems.

• Each fragment that you produce should have its own mouth/polyp. If there is only one mouth on the coral (like on this *Trachyphyllia* or a *Fungia*), cut the coral right down the middle so that each piece gets half of the mouth.

• Protect yourself and the coral by wearing rubber gloves and safety glasses. If you're using a tile saw, consider wearing a face shield and rain poncho as well.

• Discard the fouled water that is produced during the cutting process; don't dump it back into the tank.

• Clean all of your tools with freshwater afterwards to ensure that the next time you go to use them, they haven't seized up with rust.

I have been in this hobby for a decade, and I've successfully fragged many corals, the pinnacle of which is a 4-year-old Elegance (*Catalaphyllia jardinei*) that I still have to this day. My current display tank is a standard 120-gallon with a sizeable frag tank in the equipment room behind it. I'm sort of old school in that I still run metal halide lighting, a Beckett skimmer, and calcium and kalkwasser reactors. I try to keep things simple, so I don't use any supplements apart from generic magnesium salts and a little Lugol's Solution to help with color. Activated carbon, GFO, and weekly water changes keep everything looking nice, and a Neptune Apex runs the show. I appreciate a less-is-more approach to tank stocking, so there are only a few colonies in my display. I try to let them grow quite large before fragging them into many pieces and starting over. If you'd like to learn more about coral fragmentation/propagation, there are several good books written on the subject, the most notable by Anthony Calfo. There are also videos on YouTube and some great discussions in the online forums.

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a PORTUGUESE mixed 36

ANDRE SILVESTRE

INTRODUCTION AND BACKGROUND

Greetings, fellow reefers. I would like to begin by thanking *Reef Hobbyist Magazine* for the opportunity to publish a detailed piece on my little tank and being able to share my tank with other reef enthusiasts.

My name is Andre Silvestre, and I live in Lisbon, Portugal. I am 32 years old, and reefkeeping is one of my major hobbies. It all began 17 years ago when my older brother offered me a 10-gallon tank on my birthday. Takashi Amano-style planted tanks were just begining to get popular outside of Japan. I immediately fell in love with the Nature Aquarium concept and began experimenting with different types of plants, hardscape materials (wood and rocks), and fish in order to create the most beautiful and balanced ecosystem my mind could imagine. The mark of planted tanks and the art of aquascaping was from then on carved into my memory for life.

With time, I felt the need to step into something more diverse. I sought something more challenging and colorful and, at the same time, that allowed me to apply concepts I had learned with freshwater planted tanks. So, I thought an 80-gallon tank would be a great way to start in the reef hobby. After 2 years with a mixed reef and another 30-gallon tank with only LPS and softies, I took a break from the scene.

Nowadays, my life has become more reef tank friendly. Even so, the time I can spend with the hobby is not much due to my work schedule and family. So, just to keep things going and feed my passion for this wonderful hobby, I built the 36-gallon tank that will be featured in this article.

THE SYSTEM

The goal with this tank is to keep mixed corals for as long as I can. I am a strong believer that only a mixed reef tank can give you an accurate recreation of the ocean as the tank's ecosystem settles in and all living beings coexist to the point of natural balance. Of course, in real life, this is something that rarely occurs, or it has a very brief passage since we are talking about sensitive animals; something always comes along to disrupt that balance. But we try and persevere for the love of the hobby and that, in my understanding, is what makes it so special.

SYSTEM SPECS

- Display tank: 22 in. x 22 in. x 18 in. (36 gallons), 8 mm Starphire glass
- Lighting: ATI Sunpower (8 x 24-watt T5s)
- Water Circulation: Ecotech Marine Vortech MP20
- Dead Rock: 13 pounds
- Substrate: TMC fine sand
- Sump: 20 in. x 16 in. x 16 in.
- Skimmer: Bubble Magus Nac7
- Return Pump: Eheim Compact 3000 through X-Aqua in/out system
- Heating: 150-watt Jager
- Dosing: (2) Grotech Tech 1 NG
- ATO: Tunze Osmolator 3155
- UV Sterilizer: 9-watt Jebo

WATER PARAMETERS

Calcium: 420-440 ppm
Alkalinity: 7-8 dKH
Magnesium: 1350 ppm
Salinity: 1.026
pH: N/A
Nitrate: N/A
Phosphate: N/A

DISPLAY AND LAYOUT

I always liked cube tanks. They give a special feeling when it comes to seeing three-dimensional objects through glass. They also encourage innovative layout design so that everything that's inside the tank will have the same appearance when it's seen from various angles. That being said, the rock structure consists of five independent islands, each positioned carefully so it won't obscure the others when seen through the three glass panes.

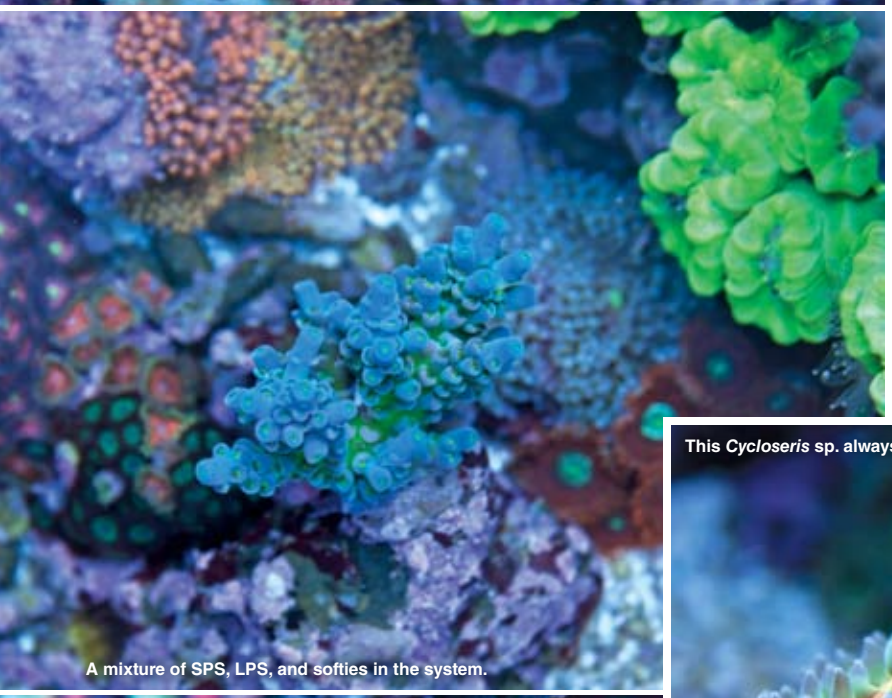
They have different shapes and sizes to promote depth of field and give a balanced feeling to the overall hardscape. This also helps in coral placement so that coral color and form is better appreciated.

LIGHTING

Despite the fact that we are in the LED era, I am still a huge fan of T5s. The ATI fixtures are still my number one choice when it comes to primary lighting in a reef tank. In this setup, I have chosen the ATI Sunpower with eight bulbs for better coverage and its ability to support good SPS colors and growth. The bulb combination includes ATI Blue Plus and ATI Coral Plus. I believe that this

An Australian piece with a nice plating growth pattern.

This Strawberry Shortcake frag is growing horizontally.



A mixture of SPS, LPS, and softies in the system.

I believe this is *Acropora nasuta*. I hope it will improve its color as it grows into a higher light position.

simple combination brings out all the colors without compromising coral growth.

From front to back, this is the bulb combination:

- Blue Plus
- Coral Plus
- Blue Plus
- Blue Plus
- Coral Plus
- Blue Plus
- Coral Plus
- Blue Plus

The bulbs that turn on first are the two Blue Pluses (one on each end). Half an hour later, the other six bulbs are turned on for a total of 9 hours with everything on. The same six bulbs are turned off half an hour earlier than the two Blue Pluses for a total of 10 hours of blue spectrum.

FILTRATION

The Bubble Magus Nac7 is responsible for the water filtration. The sump has several chambers that capture residual food and other organic matter. The particles that make it past these chambers go into the skimmer chamber where they are mostly skimmed out. Water clarity seems fine and nutrients seem low, so there's no need to add more filtration material that could otherwise starve the corals and bring unstable variations to the system.

This *Cycloseris* sp. always receives a Fauna Marin pellet during water changes.

FLOW

One Eheim 3000 return pump through an X-Aqua in/out system and a Vortech MP20 are responsible for making good circulation throughout the whole tank. The MP20 is always in Lagoon Mode and at maximum throttle to create a more diverse flow over and above the SPS corals. The soft coral population did not like

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A full tank shot of the 36-gallon reef.

This Sunset *millepora* always gives me a reason to smile.

this level of flow in the begining, but with the growth and placement of more SPS corals, flow has been reduced in the bottom of the tank where the soft corals reside.

DOSING

I used to do the Balling Method, but nowadays, I only dose calcium and carbonates. Dosing is performed by two Grotech Tech 1 NG individual dosers. I have dosed many things in the past, from vodka to amino acids, color enhancements, bacteria strains, you name it. As fun as it is to experiment and try to get to know our systems while dosing products, I found that, in my case, simplicity and stability can achieve the same results.

MAINTENANCE

Keeping this tank has shown me that maintenance can be fairly straightforward. Fish are fed twice a day with Ocean Nutrition flakes and pellets. Once a week, they get frozen food. I perform weekly 5-gallon water changes for nutrient control with TMC salt and dose calcium and carbonates. I also clean the skimmer cup and the glass panes during water changes. Due to the tank's low water volume, I test for carbonates and calcium every 2 weeks or if I notice changes

I'm hoping this pink *A. millepora* becomes the tank's focal point when it grows.

This coral was all brown when I first got it.

in coral growth. All the system pumps are cleaned every 3 months for better performance. I do not test for nitrate or phosphate, so I honestly do not know those values. I rely on the indicators of coral color and cyanobacteria growth to achieve a substantial balance between high and low nutrients.

LIVESTOCK

Corals

As I said earlier, I'm trying to keep a mixed reef as long as possible. So, regarding coral population, I have many softies like *Ricordea florida*, zoanthids, Mini-Maxi anemones, and *Sinularia flexibilis* that occupy most of the sand near the

Polyp extension is at its lowest on this Bali *Acropora* due to nipping by my Flame Angel.

This is one of my favorite palythoa colonies.

This is an Australian deep water *A. echinata*.

base of the islands. For LPS, some *Acanthastrea* and *Caulastrea curvata* are placed in the lower and middle level of the rockwork, as well as some *Euphyllia* species. The upper level is mainly for SPS corals, the majority being *Acropora* species.

Fish

I have one *Acanthurus triostegus* (goes to a bigger home in a couple of months), three *Pseudanthias squamipinnis*, two *Chromis viridis*, and one *Centropyge loricula*. This one likes to nip at SPS polyps, though no harm is done other than making them retract during the day. Other than that, it is a model citizen.

ACKNOWLEDGEMENTS

Despite the young age of this tank, I hope the readers liked the information shared and feel curiosity to see how this tank evolves in the next months. I would like to thank *Reef Hobbyist Magazine* for the opportunity to share my humble tank and ideas with fellow reefers.

I love how some zoanthids add detail to the rocky base.

Mixing colors is one of the many skills to perfect as a reefer.

A CORAL MATERNITY: THE EARLY YEARS

JORGE MACHADO DE SOUSA
Images by Andre Silvestre

(1 GALLON = ~3.785 LITERS)

About 20 years ago, I started my first aquarium. It was a 100-L (~25 gal) freshwater aquarium full of guppies. After one year of keeping guppies, I changed the aquarium to keep bettas, *Plecostomus* sp., *Colisa* sp., and others, and it stayed like that for about a year.

Then one day, I saw an aquarium with anemones and clownfish at a shop in Serra das Minas, Portugal, and since that day, my enthusiasm changed to saltwater aquariums.

It wasn't an easy task to set up a saltwater aquarium almost 18 years ago. At that time, you could hardly find any marine aquarium books anywhere. The Internet was still to come, and I couldn't find any "road friends" for the journey I was about to start.

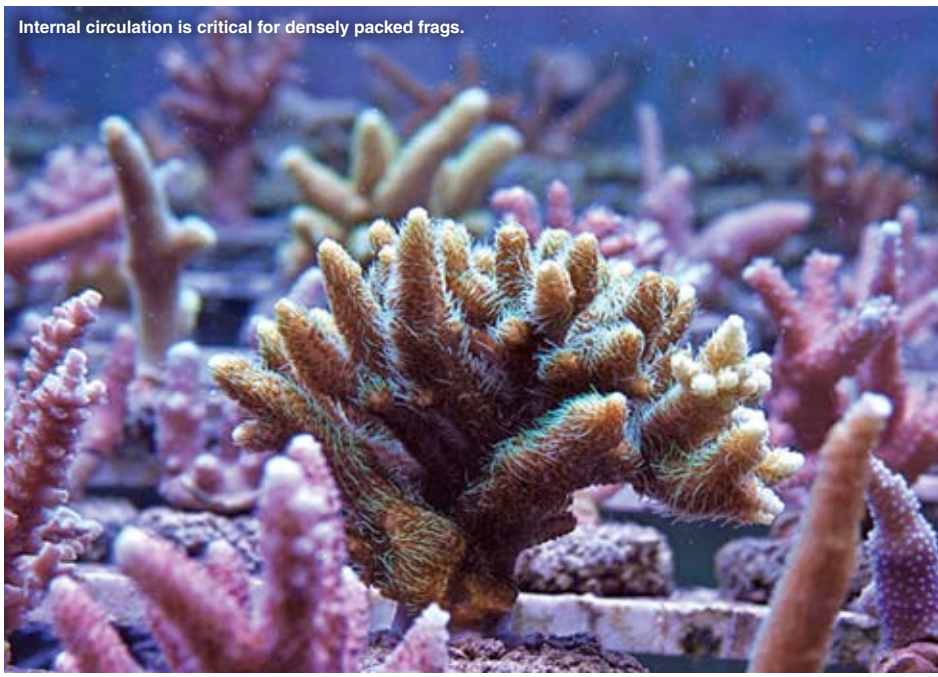
I subscribed to a few international magazines, like *Tropical Fish Hobbyist* from America and the French *Aquarium Magazine*, among others, in order to increase my knowledge.

As expected, I ended up starting a 450-L (~120 gal) reef system with some anemones and clownfish. For filtration, I used the Berlin Method, which was quite a popular method at that time. I kept adding fish and soft corals, and I soon realized that some of my favorite fish weren't reef safe.

After great effort, I finally succeeded in convincing my wife to start another aquarium in our home. The new aquarium was identical to the one we already had, but it was designed to house the fish that weren't reef safe. So I had two 450-L aquariums forming an L-shape in the corner of my living room. One was filled with corals, and the other one was a fish-only tank, sharing a common sump of 100 L, which formed a total system volume of 1,000 L (~265 gal).

To improve filtration, I planted some mangroves in the system. I placed long, shallow glass boxes along the rear of each aquarium and filled them with sand. It didn't take long to grow the mangrove gardens. They grew well, and I soon had to learn the bonsai trimming technique to avoid having mangroves reach the ceiling or grow against the 150-watt HQI.

Whenever I could, I traveled to Germany, France, Italy, and Spain to visit exhibitions, attend meetings, and view private aquariums. My goal was to seek out new knowledge and techniques developed for the hobby and to acquire corals and equipment, because in Portugal, I couldn't find anything at that time.



Internal circulation is critical for densely packed frags.

These are just some of the SPS in Daycare.

This *Turbinaria* sp. is one of many species being grown at the farm.

After just one year, my coral tank was becoming too small for the number of specimens I was keeping. I knew that it was an impossible mission to have a connected SPS aquarium (low nutrient levels) and a fish-only tank (high waste and nutrient levels) with the available skimmers.

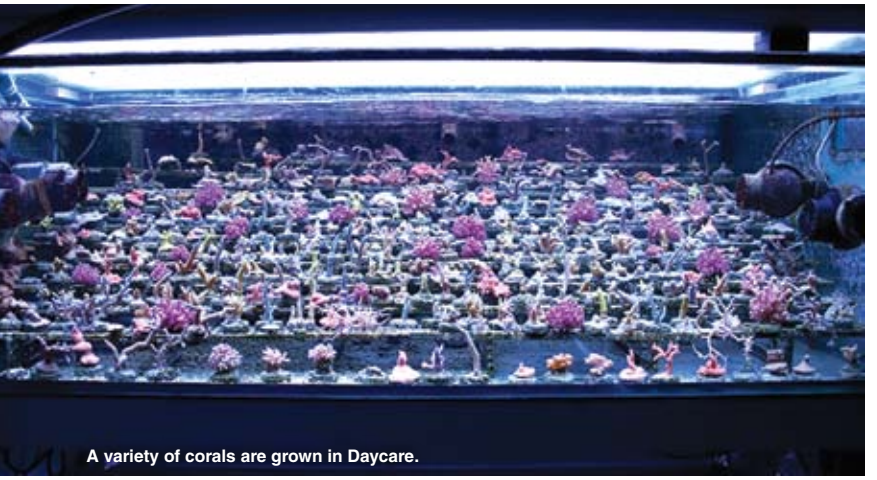
To solve this problem, I decided to convert my fish-only tank into an LPS aquarium, keeping the other aquarium for SPS only. And then, I maintained this configuration in my living room for more than 14 years.

I always had a habit of acquiring small corals. Even then, I would frag the corals into smaller fragments just to see them grow. I could always find space on the bottom or within the rockwork to place the frags from these cuts or from exchanges with my friends.

One day, my friend Zé Perpétua and I decided to rent a garage and set up a coral farm. We chose a garage in Massamá North, Portugal, located around 25 km from my home. We worked together on it for a few months, but because we had different financial objectives, we agreed to split up, and I ended up doing this project on my own.

I removed the aquariums from my home and transferred all the fish and corals to their new location. The corals were placed in one of

What used to be Maternity is now Fringing Reef Tank.



A variety of corals are grown in Daycare.

Daycare consists of these six frag tanks.

The Recently Glued Frags tank sits to the left the sump.

the first tanks built at the farm, which was fittingly named Maternity. The tanks built later were named Nursery (which received frags from Maternity) and Daycare (which received frags from Nursery).

It's been 7 years since I started, and all the time I spent building the farm and reproducing coral has been very gratifying for me. When I got into this project, I defined a very clear objective: produce the largest number possible of coral generations. When I look at the farm today, I can say I've succeeded.

SYSTEM SPECIFICATIONS

Total System Volume: 8,000 L (~2,100 gal)

· Aquariums: 6,000 L (~1,600 gal)
· Sump: 2,000 L (~525 gal)

Maternity: 650 L (~170 gal)

This was the first aquarium built and initially represented the coral frag bank, receiving all corals that came from my home. These mother colonies were the source of most of the current existing corals. Eventually, I decided to transform this tank into my reef, which I named Fringing Reef Tank, and it was no longer the coral bank for the rest of the farm.

Nursery: 450 L (~120 gal)

Initially, I used this tank to hold corals from the first phase of reproduction (polyps or tiny frags). Presently, Nursery holds frags from all of the aquariums that comprise this system.

Daycare: 6 x 780 L (~1,200 gal)

These tanks are built on a metal structure with three levels and two tanks per level. Initially, they received the frags that were coming from Nursery. Currently, these aquariums also receive frags from all of the aquariums in the system.

Recently Glued Frags: 100 L (~25 gal)

This tank is attached to the sump and has a laminar flow of water. This is where I hold the frags immediately after I glue them to the bases.

Quarantine Tank: 200 L (~50 gal)

In this aquarium, corals are observed and treated for any problems.

Sump: 2,000 L (~525 gal)

The sump houses the entire filtration system, which includes the live rock, DSB, mangroves, skimmers, calcium reactor, degassing calcium reactor, reactors for bio-pellets and zeolite, and heaters.

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A 2,000-L sump holds the filtration system.

All structures that support the aquariums were built of iron and received an anti-corrosion treatment similar to that used on the hulls of ships. They were metallized by immersion, an epoxy-based primer was applied, and a final topcoat of polyurethane paint was used.

SYSTEM PARAMETERS

pH: 7.9 (lights off) and 8.4 (lights on)
Temperature: 25 ºC (75 ºF) with lights off and 28 ºC (82.4 ºF) with lights on
Salinity: 1.026
KH: 7 dKH
Ca: 450 mg/L
Mg: 1250 mg/L
PO4: 0.02 mg/L
NO3: 0.13 mg/L
K: 400 mg/L

LIGHTING

Maternity:
· (2) Sfiligoi Infinity Vision fixtures (250-watt plasma + (4) 24-watt Deep Blue T5s (20,000 K))
· (3) AquaRay Reef Blue LEDs (50,000 K)

Other Tanks:
· Blau Lumina (10 x 80-watt T5s)
· Sfiligoi Stealth (12 x 80-watt T5s)

PHOTOPERIOD

The total photoperiod is 10 hours. In order to take advantage of the electricity time-table discounts, the lamps turn on during the night.

· 10% of the lamps: 10 p.m. to 8 a.m.
· 90% of the lamps: 11 p.m. to 7 a.m.

FILTRATION

· 150 kg of live rock
· 60 kg live sand
· 18-year-old mangroves

These mangroves play an important role in the system's filtration.

· (2) internal Deltec AP903 skimmers
· (2) Internal H&S 400-3xF5000 skimmers
· bio-pellet reactor
· (2) 5-L tubes with zeolite pumped by an Eheim 1260

CIRCULATION

Maternity: Deltec HLP Pump 5250 (5,800 L/h)
Nursery: Deltec HLP 5250
Daycare:
· Two upper level tanks: Red Dragon Titanium Pump (16,000 L/h)
· Two intermediate level tanks: Deltec HLP pump 8070 (6,000 L/h)
· Two lower level tanks: Red Dragon Pump (12,000 L/h)
100-L and 200-L aquariums: gravity fed

INTERNAL CIRCULATION

Maternity: Tunze Wavebox, Tunze Turbelle Stream 6205, Polario 22ML
Nursery: (4) Tunze Nanostream 6055, Polario 22ML, Aqua Bee 5000
Daycare:
· Two upper level tanks: (4) Tunze Wavebox, (8) Tunze Turbelle Stream 6205, (2) Polario 22ML
· Two intermediate level tanks: (4) Wavebox, (8) Tunze Turbelle Stream 6205, (2) Polario 22ML
· Two lower level tanks: (2) Polario 22ML
Recently Glued Frags: Eheim 1260 (closed loop), Tunze Nanostream 6055
Quarantine: Tunze Nanostream 6055

OTHER EQUIPMENT AND TECHNIQUES

For a long time, I used the full Balling Method, but about a year ago, I changed to a calcium reactor.

I'm using a Deltec PF 1370 calcium reactor filled with 95 kg of Deltec media. The pH inside the reactor is controlled through an Aqua Medic pH controller.

To perform the degassing of the effluent from the Deltec calcium reactor, I've turned to another reactor in their series, the Deltec PF 1001, also loaded with Deltec media (35 kg). To raise the pH from the output of this reactor, the effluent goes through a PVC tube 90

Stable parameters allow for quick encrustation.

This SPS frag exhibits good polyp extension.

millimeters in diameter and 1 meter in length, loaded with about 8 kg of aragonite reactor media.

I have a Profilux that controls heating and cooling. It also has an alarm monitoring system, which sends me a text message in case of malfunction or power failure.

The cooling system is an Eco Cooler with 4 fans from Deltec, assisted by my home A/C system.

CALCIUM AND ALKALINITY

In the absence of ideal values of Ca, KH, or Mg, I use the Balling Light Method, in addition to the calcium reactor. It includes three prepared solutions of calcium chloride, sodium bicarbonate, and magnesium chloride mixed with reverse osmosis water. I use a TEC III 3-way dosing pump from Grotech.

MAINTENANCE AND HUSBANDRY

Daily: I do a visual check of all equipment, namely circulation pumps and the calcium reactor. I also monitor the temperature and observe all living beings. I feed the fish enriched *Artemia* (with garlic, aloe vera, omega-3), *Mysis* shrimp, Cyclop-eeze, algae (Sea Veggies from Two Little Fishies), and Hikari and Grotech pellets.

Weekly: I clean the skimmer and glass, perform alkalinity and calcium tests, sprinkle R/O water on the mangroves, and feed corals with 30 drops of Coral Vitalizer and 30 drops of amino acid concentrate from Korallen Zucht. I don´t feed my corals too much because sediments present in the water column from fish feces are an excellent food source, and there is plenty of it.

Bi-weekly: I add 6 vials of Prodibio BioDigest and 2 vials of Bioptim Pro, also from Prodibio.

Monthly: I do a water change and aquarium siphoning, refill the bio-pellet and calcium reactor media, and change granular activated carbon.

FINAL THOUGHTS

The number of reef aquarists has increased significantly every year worldwide, and concurrently, the health of natural reefs has declined. Natural factors and human actions have undermined the short-term sexual reproductive capacity of reef corals, preventing a robust restoration of the reefs. This is why I feel this project is so important.

The survival of reef corals and the hobby will inevitably go forward together. I hope the Maternity coral project may be an example for the creation of many more farms around the world.

Watch Jorge propagate SPS corals from single polyps!

Watch up-close video footage of Jorge's Daycare tanks.

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Q&A REEF PHOTOGRAPHY *with* SABINE PENISSON

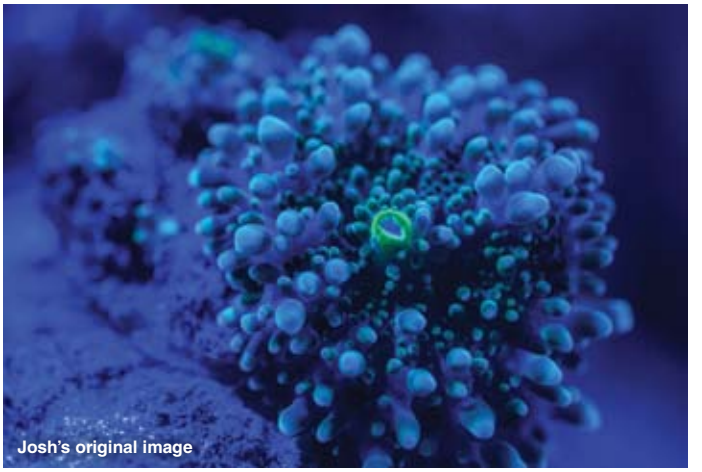
Q: Sabine,

I've seen your articles in *Reef Hobbyist Magazine* and thought I would write to you and attach a picture I've completed. I am a hobbyist photographer as well, and I recently did a few close-ups of some of my corals. Here is a *Ricordea yuma* with some touch-up with Lightroom for color, noise, minor sharpness, highlights, shadows, and black/white adjustments. I shot under actinic LED lightning because this shroom just pops. I forgot what I had the white balance set at (was highest K), but I shot raw anyway.

Thanks for the good reading, and though I was already aware of much of the technical aspects which you covered, the article motivated me to get off my butt!

Nikon D600 | Tripod | ISO 4,000 | 60mm | f6.3 | 1/100

Josh from Tampa, Florida



Josh's original image

Sabine's edited version

A: Dear Josh,

The *Ricordea* photo you sent is very nice! The blue LED works very well on such species, showing beautiful fluorescence. If I may, I have a few ideas on how to make the best out of such a photo, even if the overall result is already nice.

First, I recommend working on a far lower ISO value since you're using a tripod. You don't need the ISO at 4,000 because corals like this barely move and don't require a high shutter speed. Set your camera to Aperture Priority mode and raise the aperture slightly to eight or ten. The camera will automatically adjust the speed of the shutter. Then, cut the water flow in the tank and set an ISO value of 1,000 or less. This will result in less noise than is currently present, and the mouth of the *Ricordea* will be sharper. By raising the aperture, you'll get the mouth and the tentacles of the surrounding crowns perfectly clear (if there isn't any water movement in the tank).

As well, I think the background is a bit too similar to the subject's tones, which gives an impression of flatness. I suggest that you create a new layer, mask the *Ricordea*, and work on the selective colors of the background to make it look darker. Then, use the burn tool to add density to the background so that the main subject glows compared to its surrounding. With the same burn tool, you can also darken the mouth of the *Ricordea* a bit (choosing the shadows/dark tones channel); this will artificially increase the clarity of the mouth, which is a point of interest to highlight when shooting this species.

In addition, I don't know if you keep your images only on screen or if you print sometimes, but be aware that these kinds of electric blue hues given by LED lights are extremely tricky; most printers don't manage these tones. It will result in a duller purple tone, and that is not what we want, of course! You can check the color equivalence for print that is given on Photoshop by selecting View > Gamut Warning and View > Proof colors. This kind of image needs a very precise color treatment before you print it. You'll have to create new adjustment layers and work on the selective colors channel by channel. Also, you'll have to adjust the hue and saturation so that new, unwanted colors aren't created.

With the skills you already show, I'm sure you'll get really great results soon. I'm happy to know that the paper motivated you to practice more. It is only by practicing and trying new things that we get nicer results. And don't forget, the best photo will always be the next one!

-Sabine

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Red Sea

Stichodactyla haddoni and clownfish

Treating Compromised Host Anemones with Antibiotics

MINH NGUYEN

I've had aquariums for as long as I can remember. I kept bettas, guppies, and goldfish as a child. As a teenager, I kept discus, oscars, African and South American cichlids, and so many other species of fish that I cannot list them all. However, once I saw a clownfish with an anemone, I was hopelessly hooked on marine aquariums, especially those with clownfish and anemones.

Like most reefkeepers, my first attempt at keeping an anemone did not end well. I killed my first anemone (a *Condylactis gigantea*) and clownfish (a tank-raised *A. ocellaris*) in 1980. At that time, I did not have enough knowledge, and information on reefkeeping was hard to come by. I did not attempt to keep an anemone again for many years.

Although host anemone species are still difficult to keep, today's technology and our modern understanding of reef aquariums are sufficient for us to keep any of them. They require a well-run, stable system with low nutrients. The most difficult of the host anemones also require high light and good circulation. Unlike corals, unhappy anemones can wander around the tank. They can sting corals and sometimes even crash the tank if they wander into the overflow or powerheads. While not easy, if a reefkeeper is up to the challenge,

This is a sick *Heteractis magnifica* before treatment.

he or she should be able to keep a host anemone thriving, provided that a healthy anemone is obtained to begin with.

As many anemone keepers know, the anemone collection and shipping process from ocean to local fish store is a stressful event for the animals. Many host anemones do not survive this process without help, especially *Heteractis magnifica* and *Stichodactyla gigantea*. Other host anemones also have high mortality. With help from other hobbyists on the anemones and clownfish forum on Reef Central, I have come up with an antibiotic protocol that seems to be successful at drastically reducing the mortality rate of host anemones during this critical time.

The antibiotic choice: ciprofloxacin (Cipro), a fluoroquinolone antibiotic or trimethoprim/sulfamethoxazole (Septra) combination antibiotic

There are several reasons I chose these antibiotics. The first reason is that they are broad spectrum antibiotics that should cover most pathogens involved. In humans, these antibiotics effectively cover most of the pathogens involved in a saltwater wound infection. This is not to say that the pathogens that infect anemones are the same ones that infect humans. However, we have to start somewhere, and these two antibiotics are reasonable choices. Another reason is that these antibiotics are inexpensive and widely available. Cipro and Septra dissolve well in water and will break down with light exposure in a tank environment. Another antibiotic that can be used is levofloxacin (Levaquin). However, Levaquin is a newer fluoroquinolone and much more expensive because a generic version is not available.

After treatment, this anemone is healthy and ready to host some clownfish.

Here is another view of the same sick anemone.

INSTRUCTION

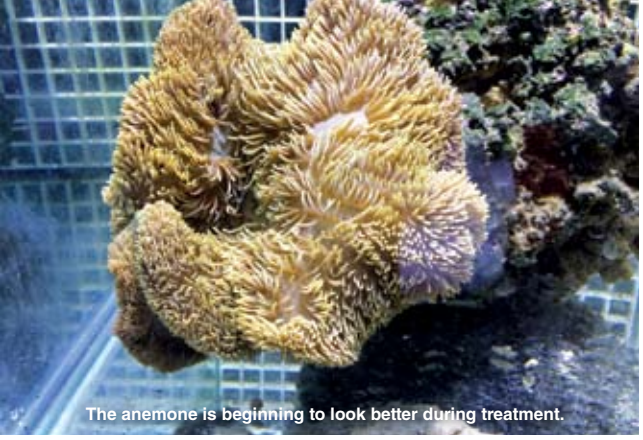
The dosage for continuous exposure (not dipping) in a hospital tank is 250 mg for Cipro or 160/800 mg for Septra per every 10 gallons of water. Septra is a combination antibiotic with 160 mg trimethoprim

This is my basic hospital tank setup.

A sick carpet anemone at the very beginning of treatment.

and 800 mg sulfamethoxazole per Septra DS tablet. I recommend that anemones be treated in a hospital tank. I use a standard 20-gallon (high) tank, powerhead, heater, and egg crate. I also recommend that full light is provided for the anemone to help it recover via photosynthesis. The hospital tank is divided into two compartments by a piece of egg crate. Place the anemone with an inert object (a mug or a piece of medium-sized live rock) for it to attach to in one compartment. In the other compartment, place the heater and powerhead.

Fill the hospital tank half way (10 gallons) and add either Cipro or Septra. Then add the sick anemone. Hospital tank temperature and salinity must be kept stable. I recommend that all the water in the hospital tank be changed daily as the daytime cycle comes to an end. After a water change, re-dose the antibiotic. The best method to add antibiotic into the hospital tank is to rub the antibiotic tablet between thumb and index finger in front of the powerhead until it fully dissolves. With reasonable light, it is likely that most or all of the antibiotic will be degraded by the end of the daytime cycle. Adding medication at the



The anemone is beginning to look better during treatment.

Here is the same anemone immediately post-treatment.

Here, the anemone is fully recovered!

Stichodactyla gigantea and clownfish

Stichodactyla haddoni and clownfish

Heteractis magnifica and clownfish

beginning of the nighttime cycle should give optimal antibiotic exposure for the anemone for most of the 24-hour time period. Adequate circulation with a small powerhead is a must.

IMPORTANT TIPS

• The hospital tank will have minimal ability to process ammonia. I recommend feeding a sick anemone only after the treatment process ends.

• Low-level antibiotic treatment creates resistant strains of bacteria. I recommend using the full dosage through the end of treatment versus tapering the dosage of the antibiotic.

• Anemones often discharge various substances when they are not well. When the hospital tank's water has visible discharge, I recommend removal of the discharge with a net or pipette.

• At any time, if the water of the hospital tank becomes cloudy, I recommend a 100% water change with a new dosage of antibiotic added.

LENGTH OF TREATMENT

It is recommended that the anemone be treated for a minimum of 7 days. Treatment should continue for at least 3 days after the anemone begins inflating normally. Early termination of treatment is a mistake that has caused me to lose several anemones.

DISPOSAL OF ANTIBIOTICS

There is no special treatment needed for disposal of water containing these antibiotics. Cipro and Septra will break down quickly with light exposure and will not stay around long in the environment. The short course of antibiotics used in this protocol should not have a significant impact on the environment. It is far more harmful for the environment if there is a continuous low-level antibiotic discharge than a short course like this protocol. In human usage, these two antibiotics are eliminated unchanged by the kidney and flushed down the toilet into the sewage system, which is what we are doing with our treatment water. It is unclear if treatment by bleach will do anything to the antibiotic. If you are concerned, store the water under sunlight for a few days before discarding.

Lastly, I clean the hospital tank and all equipment thoroughly, including bleaching the full setup in fresh water. Once thoroughly cleaned, the hospital tank can be dried and put into storage until needed again.

CONCLUSION

While not all newly imported host anemones have to be treated, many of them arrive to us very sick and will not survive without help. This treatment regimen will not save all compromised animals but does significantly improve the survival of very sick anemones. Hopefully, with widespread dissemination of information like this, we will do a much better job at providing the care these beautiful creatures need to thrive.

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Amblyeleotris yanoi and *Alpheus randalli*. Image by Steve Childs.

SHRIMP GOBIES FOR NANO REEFS

ALBERT THIEL

Nano reef aquariums have grown quite a bit in popularity over the last few years. Particularly in the last 3 years, I see more and more of those who are just entering our hobby setting up these kinds of aquariums rather than the larger sizes that we were accustomed to seeing some years ago.

Another change is that a lot more information can now be found on nano reefs, from aquarium forums to books and magazines and at least two Facebook nano groups (one being my own) that tackle every possible topic involving nano reef aquariums.

Hundreds and hundreds of topics could be selected for an article on nano reef aquariums, but the one that comes up most often when hobbyists ask questions has to do with the types of livestock they can house in these tanks. Nano tanks nowadays typically vary from as small as 5 gallons to perhaps as large as 30 gallons. Indeed, the term nano has become somewhat elastic, and some hobbyists who keep 40-gallon breeder tanks also refer to them as nanos.

There exist, of course, hundreds of types of fishes and corals that can be kept in these smaller tanks, but one group of fish that has always fascinated me more than any other is the shrimp gobies. These fish are very well suited to be kept in nano reefs. In fact, they are better kept in a small aquarium than in a large one where they may decide to make a burrow in an area where you cannot even see them.

In addition, shrimp gobies are shy. In larger tanks where larger fish are kept as well, shrimp gobies have a tendency to go into hiding. They are, in my opinion, much better suited for the nano tank than for larger reef aquariums.

A fairly wide choice of shrimp goby species are available in the trade, as are the shrimp they typically live with. Shrimp gobies belong to one of three genera: *Amblyeleotris*, *Cryptocentrus*, or *Stonogobiops*, and of course some of the genera have a number of species. Gobies in general make up a large group of fishes with well over 2,000 species in existence when all genera are considered.

Stonogobiops yasha and *A. randalli*. Image by Sabine Penisson.

A. bellulus. Image by Sabine Penisson.

The shrimp they associate with, known as pistol shrimp, are typically of the *Alpheus* genus, very often *A. randalli*, *A. bellulus* (also known as the Tiger Pistol Shrimp), *A. djeddensis*, or *A. ochrostriatus*. Note that more than one goby can be kept with a shrimp, and more than one shrimp can be kept with some gobies. You can also keep shrimp gobies without a shrimp. Most hobbyists, however, will house these fish with their favorite shrimp.

Shrimp gobies have very good eyesight, but the shrimp themselves do not. On the other hand, the shrimp are excellent diggers, which the gobies are not. Together they make an outstanding mutualistic team. The goby protects them both from possible predators or anything that comes too close to their burrow. The shrimp digs out and maintains the burrow and extends it as needed.

ENVIRONMENT

Generally accepted reef tank water conditions will be just fine to successfully keep any shrimp goby and its associated shrimp. Remember that shrimp need to molt, so iodine levels are important. But no iodine supplementation should be necessary as long as you perform weekly or bi-weekly water changes, which will replenish the element sufficiently.

What is important, though, is to pay attention to the type of substrate used and the tank mates chosen (no bullies at all, please). Keep in mind that these fish never venture very far from their burrow, a space they can actually retreat into if they perceive anything nearby as a threat.

A. randalli. Image by Sabine Penisson.

The fact that they remain near their burrow is important to take into account when feeding your gobies and shrimp. Indeed, if the food provided is not added near the area where the goby and shrimp are residing, they may not get enough nutrition, and that may lead to the loss of the goby, the shrimp, or both.

The best strategy to feed your shrimp goby is to target feed it and its shrimp, making sure that you do so in a gentle manner. This is important so the fish and shrimp do not retreat inside their burrow,

Cryptocentrus cinctus and unidentified shrimp. Image by Henry Rafael.

perceiving the sudden movement of water laden with food as a threat of some sort.

There are many devices on the market that you can use to target feed, and you can even make one yourself. The simplest form would be the famous turkey baster, easy to get and very inexpensive. Suck up some food, calmly lower whatever feeding device you are using close to the fish and shrimp's burrow, and gently release some of its contents close to the burrow.

Normally, the goby will be positioned right by the entrance of the burrow, partially exposed, and the shrimp will, in most cases, be right behind. The shrimp will continually touch the goby's body with one of its antennae. When the goby detects something that could mean danger or aggression, it will wiggle its tail, thus alerting the shrimp that something is going on. The shrimp will retreat inside the burrow immediately, followed by the goby. They will both remain inside until the perceived danger is gone, at which point the goby will come out of the burrow slowly to make sure that there are no longer any signs of danger. The shrimp will then follow and come out as well unless it is repairing or enlarging the burrow.

At times, the shrimp will come out perhaps a few inches, often to look for particular grains of sand, small pieces of shell, or rubble that it wants to use to reinforce the inside of the burrow.

This brings me to the kind of sand you should use for your substrate when keeping shrimp gobies and their shrimp. A medium grain-size would be best, not too fine and not too coarse. Also, it does not hurt to add a very small amount of coarser bits and pieces, as it aids the shrimp in building a sturdier burrow.

At times, shrimp gobies will only dig out an area underneath a rock and not build a true burrow in the substrate itself. Having a piece of live rock or other type of rock that has a somewhat arched section that you can place on the substrate will make the shrimp's job a lot easier. Make certain that the back part of that piece of rock is embedded in the substrate. This is to ensure that no unwelcome visitors can get into the cavern-like burrow.

Normally when any other fish or organism comes too close to the burrow or hiding area, the goby and shrimp will retreat. Sometimes, however, the goby may come out further and display an aggressive posture to ward off the intruder. Oftentimes, intruders will show up at feeding time and literally try to steal the food you are providing for your goby and shrimp. In those cases, the goby may indeed come much further out of its hiding area than usual and defend its feeding area.

One way to avoid food competition is to feed all your other fish first (and since you are keeping a nano reef, there should not be that many). Once you have done so, start the target feeding of the goby and shrimp. It may not solve the entire food stealing issue, but it will certainly reduce it a great deal.

Remember that target feeding is only a method of trying to ensure that your pair of goby and shrimp get a sufficient supply of food. You will still need to confirm by visual observation that they are indeed feeding sufficiently, and that is especially the case with some of the really small shrimp gobies. They may remain in hiding most of the time and only dash in and out of their hiding area when a small food morsel passes by.

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Stonogobiops yasha. Image by Eli Fleishauer for Quality Marine.

Stonogobiops dracula. Image by Eli Fleishauer for Quality Marine.

Amblyeleotris randalli. Image by Sabine Penisson.

Amblyeleotris aurora. Image by Eli Fleishauer for Quality Marine.

COMMONLY AVAILABLE SHRIMP GOBIES

Stonogobiops yasha (also known as the Yasha Goby or the White Ray Goby) remains small (up to 2.5 inches) and is very shy, peaceful, and not as commonly available in the hobby as most other shrimp gobies. The red and white alternating striping makes this a very appealing fish. Yashas associate with several *Alpheus* species shrimp but like *A. randalli* best. It's preferable to feed them more than once a day. Meaty foods are best and strongly suggested. Small brine, small *Mysis*, and small morsels of scallops or other meaty foods will keep this fish in great shape. Make sure it does feed adequately, and use the suggested target feeding method. Minimum tank size should be 10 gallons, but a little larger is better.

Stonogobiops dracula (or the Dracula Goby) is reef compatible, peaceful, and somewhat shy (as all of them are). This goby grows up to 3 inches and needs lots of hiding spaces. Like most other gobies, the Dracula Goby should be fed several times a day. It will be seen in the open more often than other shrimp gobies, sometimes hovering outside or right above its burrow. This shrimp goby will often live in a burrow close to a rock base with its favorite shrimp, Randall's Pistol Shrimp. It is mainly a carnivore (like all other shrimp gobies) and will do well on meaty foods supplemented from time to time with phyto- and zooplankton, as well as bacterioplankton. The Dracula Goby is a bit more daring than others in defending its territory, as long as the intruder is not much larger or a predator.

Amblyeleotris randalli (or Randall's Goby) is perhaps one of the better-known shrimp gobies. It is also referred to as the Orange Stripe Goby, having a large orange stripe running across its eyes. This goby grows to about 4 to 4.5 inches, but specimens sold in the hobby are usually smaller, often 1 to 2 inches. Remember that well-fed fish grow, and tank size does not affect how large they get (a myth in the hobby is that tank size limits a fish's size, and that is not so). Randall's Goby is peaceful and not aggressive toward other fish. It may even share a burrow with other shrimp gobies. Feed this fish multiple times a day and make sure it actually consumes the food and is not outcompeted by other fish in the tank. Males sport a fan-like dorsal fin that is quite impressive. The fin has a very visible dark spot on it that could be considered a false eye. This could be a defensive trait since an aggressor may mistake it for the fish's actual eye.

Amblyeleotris aurora (also known as the Aurora Goby or Pink Bar Goby) grows up to 4 inches in length and has a very interesting tail. The tail is yellowish in color with bright pink dots outlined in blue. In images, this detail may be hard to see, but you cannot miss it when seeing the live fish in person. Auroras can be kept in tanks as small as 10 gallons, but larger tanks are far better for fish of this size. As with all others, target feed several times a day. Note that this goby may venture a little further away from its burrow for food and may even pick food off of the substrate. Other species will usually only feed out of the water column. It is an interesting shrimp goby to own but a little more delicate to care for than the others listed.

Amblyeleotris guttata (or the Orange Spotted Goby) is a peaceful fish that grows to about 3.5 inches but is sold in the trade at

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Amblyeleotris guttata. Image by Eli Fleishauer for Quality Marine.

Cryptocentrus cinctus. Image by Eli Fleishauer for Quality Marine.

smaller sizes. Its white body is covered with orange spots that have a brown marking around them, making this fish easy to recognize and differentiate from somewhat similar-looking gobies. It is considered reef safe, but unlike other shrimp gobies, this one may pose a risk to other ornamental shrimp. I say "may," as such incidents are reported, but this does not seem to be the norm. This particular species was successfully bred in captivity quite some time ago. Again, multiple feedings a day are recommended (small meaty foods as mentioned earlier).

Cryptocentrus cinctus (also known as the Yellow Watchman Goby or the Prawn Goby) needs a larger tank, and 30 gallons is the minimum I feel comfortable placing this goby in. It grows to about 3 inches but requires a lot of swimming space. Again, plenty of hiding spots or a nice burrow or cavern is needed. Multiple feedings a day are highly recommended. This goby can be aggressive to conspecifics unless you have a mated pair. Note that even though it is called the Yellow Watchman Goby, it does not always come in a vivid yellow color but is also found in darker shades. It is a very interesting goby to own and a pleasure to watch as it displays its antics in your tank.

Stonogobiops nematodes (also known as the Black Ray Goby or the Hi-Fin Red Banded Goby) is peaceful, remains small (up to perhaps 2 inches), and is quite a shy fish. It is important to make sure that nothing in the aquarium chases or harasses it or you will lose the fish. Either it will jump out of the tank or go on a starvation diet and eventually perish. The fish has a silver-white coloration, a

Stonogobiops nematodes. **Image by Eli Fleishauer for Quality Marine.**

yellow face, and shows very distinct, dark diagonal stripes across the body. Given its small size, it should be associated with the smaller *Alpheus* genus shrimp.

Shrimp gobies associate with pistol shrimps, but not with all species. The ones they do associate with are typically the smaller types. All shrimp goby species are known to be jumpers, and they can find their way out of your aquarium through the smallest openings. A tight cover is definitely recommended if you keep any of these gobies. Your fish may not jump, but it is worth taking the precaution since you will very quickly become attached to it.

Each species of fish comes with its own requirements and necessities. To house shrimp gobies properly, it is necessary to be conscious of their feeding and living habits, choose their tank mates with care, and follow the established husbandry guidelines. With a little planning and attention, these fish will flourish in the home aquarium, and you will be able to enjoy them for many years.

A. wheeleri **and** ***A. randalli.*** **Image by Sabine Penisson.**

EXPOSED!

Joshporksandwich's Zoa-Fragging Technique

JOSUE MATIAS

Hello everyone, Joshporksandwich here. Reefing is an amazing hobby where you can spend money to build a collection of rare corals, and in a matter of months, the corals can multiply so quickly that you have no choice but to cut them back. In this article, I will share some of my favorite tips for successfully fragging your zoas, giving those beautiful polyps the greatest chance to flourish.

SAFETY

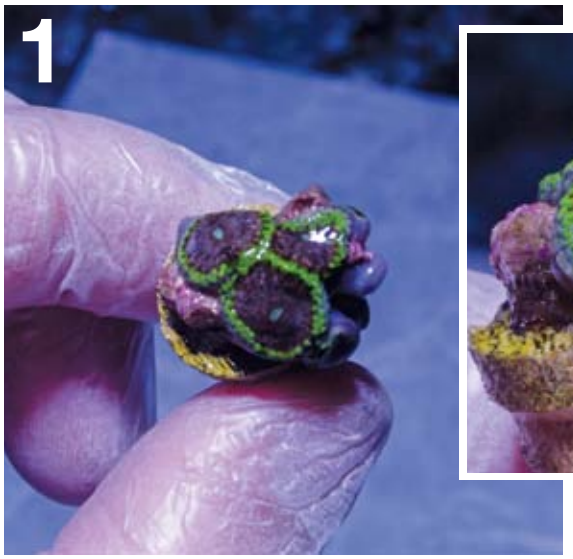
Before we continue, I want to inform you that zoas and palys, beautiful though they are, release a poisonous substance called palytoxin when cut. This substance is dangerous if it gets in your eyes or any open cuts. It can cause some very ugly infections and sometimes even blindness. One of the very first times I attempted to frag zoanthids, I cut myself with the same blade I cut zoas with. The next day, I had to go see a doctor because my finger doubled in size and had pus in the cut area. I ended up having to take antibiotics for a week. Another time, I was squirted in the eye by a zoa. My eye looked very nasty, and I even had trouble seeing through it for a while. Another side effect of palytoxin is that it causes dryness in the hands. My hands would get super dry and crack a lot. The three fingers I used most to frag with were the most affected. No cream could fix this condition, and I had to stop fragging for 3 months until it became bearable again. Last but not least, I started wearing a mask because very small amounts of palytoxin can be released into the air. I kept waking up the morning after fragging with flu-like symptoms. My nose was super congested, and I kept sneezing and coughing. This would go away within a day or two but always occurred the morning after fragging. So please, my friends, when you attempt to cut any coral, wear eye protection and gloves (not only to keep palytoxins off your hands but fragging glue as well). I started wearing five-dollar eye protection glasses and the cheapest gloves I can find, and so far, no accidents.

I keep my fragging station simple. First, I use a 12 in. x 12 in. tile as my cutting board. I limit the amount of tools to only what is necessary. I use tweezers to grab the corals (and to limit the amount of glue that falls on my gloves/hands). Tweezers allow me to delicately grab small, fragile corals while putting the least amount of stress and strain on the polyps.

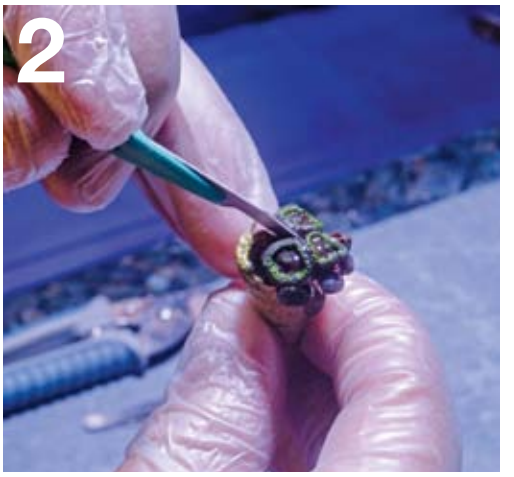
I use three different kinds of cutters. The first big one with the blue handles is used to cut bigger pieces of rock with the polyps attached. The second ones are surgical scissors (to the right of the blue-handled ones) for when the polyps are like a mat or extremely close together. These scissors are also great for cutting smaller clusters of corals that may have fallen off or need gentle fragging. The last ones I use are called bone cutters. These are my favorite and my go-to for most fragging. They are not only strong but always get the job done.

I prefer the #15 scalpel because it is very small and can fit anywhere. I use the blade to mark in-between the polyps before I use the bone cutters or anything else. I mark the rock by sawing a line a few times until it leaves an indentation on the rock. This allows for a precise cut when using the bone cutters.

For this fragging demonstration, I will be cutting the TGC Atlas paly.



Inspect the coral and plan where you will cut.



With a small scalpel, mark the cut line so you know where to cut.

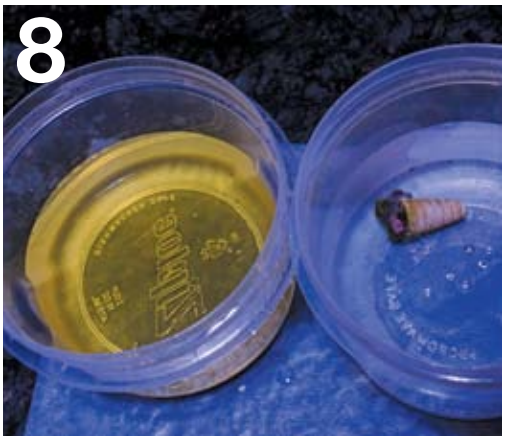
Cut with the blade along the mark and between individual polyps.

When you use a sharp, clean blade, it stresses the coral less.

Once you're done with the scalpel, bone cutters can be used on the hard plug or rock.

Cutting the base with the zoas still attached is best since it leaves you with a hard bottom to glue where you like.

If the polyps must be scraped off their base, be very careful not to cut into the polyp body.



Add 10 drops of Lugol's iodine solution per cup of tank water and dip freshly cut frags for 10 to 15 minutes to help prevent infections.

Always dry the gluing surface on the plug so the glue adheres strongly.

Try to create frags with a base that can be easily glued to the plug.

Here are the same polyps a few days later, healing nicely.

GLUING

I use IC-Gel to glue my frags, but any cyanoacrylate gel glue will do. I like to use the small frag plugs from Boston Aqua Farms because they fit next to each other on the egg crate. I soak my frag plugs in a container in my frag tank beforehand. This prevents air bubbles from seeping out of dry plugs when I glue the frags.

I suggest that if you are attempting to frag for the first time that you seek guidance from someone who has some experience. Also, try fragging hardier zoa colonies first. Typically, when zoas die after being fragged, it is the roughness during the cutting that kills them; be careful when handling and cutting the corals. Give your freshly fragged zoas anywhere from 2 to 3 weeks to heal. When you move a frag from your system to someone else's too early, it can stress them. Freshly cut frags will not sustain the stress of this change and will melt or not open properly. Finally, don't sell freshly cut frags. It is an injustice to the frag and your fellow reefers.

Scan this QR code to watch my video demonstration.

EQUIPMENT REVIEW:

Aquallumination Hydra TwentySix

($399 MSRP)

JIM ADELBERG

The market for small-sized LED fixtures has exploded in recent years, and let's be honest, a great many of the fixtures sold are neither well constructed nor well designed. Lighting is a critical life support parameter for most of the corals (and anemones) we keep and thus should be a large part of the budget for any system housing these animals. There have been significant advances of late in the technology of small LED fixtures, allowing for higher-powered LEDs to be successfully cooled in smaller fixtures, but don't be fooled by cheap high-powered systems since part of the appeal of LEDs is their longevity. This depends on both the quality of the diodes and their operating temps. Like a lot of things in this hobby, it's often better to spend more up front and acquire a quality piece of equipment from a reputable manufacturer. This brings us to our review.

My initial impression on unboxing the Hydra TwentySix was that it's small…very small. The unit is 7¼ inches long, 5⅜ inches wide, and only a little over 1½ inches thick. There's only one plug and one button, and that's it. I really liked the minimalist aesthetic and thought it would look great over one of my 18 inch cubes. Reading through the online documentation, I nsoted that it pulled up to 95 watts and came with 80 degree optics, which, combined with 2 pucks of 13 high quality LEDs each, should give a nice blend of light. But considering its size, would it be bright enough?

The next step was to set up the AI Director to access the full functionality of the Hydra. The fixture only has stepped increments of 20% intensity built in, so be sure to pick up either the AI Director (or the AI wireless controller) to get the real value out of your light. The Director setup isn't too involved and despite being network config-challenged, I was able to connect to the controller easily and fire up the light. The software has all the separate controls you might need: individual templates customizable for intensity versus color channel, timers, weather and storm effects, and more. The optics give a nice spread, and since you can customize the individual LED channels, you get to choose how your tank will look throughout the light cycle. This fixture is new to the market, but AI fixtures have a good rep for longevity, and this unit should be no exception. And to answer that first question; this light, given its petite size, is surprisingly bright!

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Let's Start A Story

"I wanted to make a sump that's high quality and affordable for the hobby."

- Louie T,
President/CEO of Eshopps

"I started fish keeping with my father when I was 7. The hobby led me to many ventures."

- Ralph C Cabage III,
CEO of Sicce

"My friend Victor and I started to collect & grow corals, and 3 years later, our sickness led to the start of a retail store and a website."

- Lou Schiavo,
Co-Owner World Wide Corals

"I received a 10-gallon freshwater tank for my 12th birthday (1977)."

- Scott Kohler,
VP of Red Sea

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