IN THIS MONTH'S MASWA NEWS

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Anemones can get too much light but luckily for them they are able to close up or move to a more suitable spot in the tank. In fact this is one of the reasons why anemones wander endlessly in an aquarium. It is most commonly due to there not being enough light, though.

Water Motion

Anemones require steady water motion in order to function properly. They need a current of water to carry their wastes away and also to bring them food such as plankton and oxygenated water. Without sufficient water movement, anemones tend to droop and over time will wander around the tank looking for a position that has a greater flow of water.

Anemones seem to look best when there is an alternating current of water. It is not known if they actually benefit from this or not, however they look more realistic and intriguing when their tentacles are “swaying in the breeze”. I have kept anemones both with and without alternating current with equally good results.

Next newsletter, David will tell us how to go about identifying the most commonly kept clownfish-hosting sea anemones. This is very helpful in deciding if they are suitable for your aquarium and if they are the right host for your clowns.

Annual Donations

Please be aware that the annual $20 donation for membership is now due. If you could pass donations on to Andy Dolphin as soon as possible, it would be much appreciated by your society and newsletter organisers.

on the rock its attached to rather than getting it removed.

A healthy anemone should also be partially expanded and be slightly responsive to touch. Some strong stinging anemones like the carpet anemones should also feel sticky due to their strong stinging cells.

Light Requirements

Clownfish-hosting anemones require similar light conditions to photosynthetic hard and soft corals. Contrary to popular belief, anemones will not survive under a single or double fluorescent tube, even in a shallow aquarium! Anemones can live under both fluorescent and metal halide lighting setups, though.

To keep an anemone under fluorescent lamps a minimum of four tubes for tanks under 35cm depth, 6 fluorescent tubes for tanks between 35cm and 45cm depth and 8 tubes for tanks between 45cm and 60 depth. These recommendations may sound high but one must consider that anemones are most commonly collected from shallow water and require intense light. For smaller aquariums the minimum number of fluorescent tubes is easy to accommodate but for larger tanks it becomes very difficult. That is why many larger tanks are lit by metal halide lamps.

Anemones are far easier to keep under metal halide lamps. The reason is that it is far easier to meet the minimum light requirements for the anemones. As a minimum recommendation a 150 watt metal halide lamp will be sufficient for tanks that are under 45cm depth. For deeper tanks 250 watt or 400 watt lamps are a better choice.

It is often thought that light can be compromised if the anemone is fed frequently. This may be possible however I have not seen this to be true. I have seen bubble tip anemones reproduce without any additional food.

Next Meetings

March's MASWA meeting will be held at 7:30 pm on WEDNESDAY, March 31st at Tony Fiorentino's house. The address is 13 Andrews Court, Padbury. Tony has a 5'x2'x2' system with Berlin filtration. Tony is a master of DIY and has made many excellent pieces of hardware for his aquarium addiction. If you are into DIY, then you can't afford to miss this meeting.

April's meeting will be held at Nathan Cope's house. The meeting will be at 7:30 pm on WEDNESDAY, 28th April. The address is 21A Norton Street, South Perth. Last time we were at Nathan's new house, he didn't even have an aquarium! This time, he will have a brand new (and very odd shaped) aquarium running. It will be roughly 7.5'x3'x2.5' and will be filled with live rock from Point Quobba obtained on a dive trip in early March. Feel free to come along and give Nathan a few tips on how to set up a decent reef tank.

Previous Meetings

January's meeting was held at David "Don't call me Dave" Bloch's place. This was our first Wednesday meeting and it proved to be popular as we reached a record attendance. David's 4'x2.5'x2' tank had only been running for a month, but you couldn't tell as it looked like a well established reef aquarium. David gave us a run down on the workings of his system which obviously interested a lot of people as he was swamped with questions after his presentation. We also held our second raffle. Two coral identification posters supplied by ***Aqua Direct Australia*** were raffled off as well as a $50 gift voucher donated by Paul and Danuta Williams of ***Marine West***. Paul has generously offered to donate a $50 ***Marine West*** gift voucher for the raffle each month.

February's meeting was held at Paul and Danuta's house in Gosnells. Paul discussed how the shop was set up, which regions of the planet the livestock comes from and how to choose healthy fish from an aquarium shop. We also had a lively discussion on the appropriate usage of Berlin and trickle filtration systems. Paul also expressed his concern that the club seemed to concentrate on "reef" systems only rather than catering for all styles of filtration and tank setups whether they be fish-only, temperate or reef. Most members agreed it would be nice to have more diversity in the club.

The Care and Feeding of Metal Halide Bulbs

from Aqua Direct Australia

Metal halide (MH) lamps seem pretty straight forward, but there is more to them than meets the eye. Metal halide lamps are a type of high intensity discharge (HID) lighting system. HID lights typically run at high voltage, extremely high temperatures and typically have the potential to output a lot of UV radiation. Consequently, there are a few rules for extending the life of your bulbs and reducing the chance of them exploding on you.

UV Radiation

The plasma arc from an MH lamp emits a lot of ultraviolet (UV) radiation. The inner envelope of MH lamps is made of quartz and quartz is transparent to UV radiation. For this reason, the outer envelope is usually made of glass as glass blocks 95% of UV radiation. Some bulbs, such as the double ended ones where the outer envelope is very close to the inner envelope, still transmit a lot of UV through the outer envelope. For this reason, a piece of tempered 5mm thick glass should be put under these bulbs to cut the UV back to acceptable levels and stop corals and other organisms (such as aquarists) from burning.

Problems with heat

As mentioned above, HID lamps run very hot. Metal halides typically run between 350°C and 450°C at the quartz envelope. The metal base of Giant Edison Screw bulbs (the ones typically used in the aquarium hobby in Australia) run at around 210°C, hence the need for ceramic bulb holders and heat insulated wiring. Naturally you must take care not to burn yourself on the bulbs when they are on, but more importantly, you should avoid allowing water to splash on the outer *glass* envelope. 30cm is the recommended height above the water that the bulb should be mounted to help avoid water splashes. Take care with Tridacnid clams that are exposed whilst doing water changes as

anemones are found in different habitats, eg. sand anemones live on sand. Once you have decided upon the species of anemone that you want, its time to choose a healthy specimen.

The second point to consider is to choose a healthy specimen. Unless you choose a healthy anemone, you will have an uphill battle trying to keep it alive and will most likely have endless trouble and frustration. A healthy anemone should be brown or some shade of brown and not white or fluorescent yellow or green. White anemones have lost their zooxanthellae (commonly called "bleaching") and are no longer able to photosynthesize. Bleached anemones are commonly ones that have been in an aquarium shop for some time and have lost their zooxanthellae due to lack of suitable light. They rarely recover from this state and once like this, seem to lose their ability to detect light. More often than not will not at this point, they will no longer react to light in any way, and refuse to open up. They usually seem to wander aimlessly in the tank and if they do attach anywhere, they do so under the rocks in a shady area of the tank. After some time, they simply get so small that they disappear all together. Fluorescent green or yellow anemones are also often specimens that have bleached, however some species of carpet anemones are naturally this colour. It is usually quite simple to see if they are bleached or not. Naturally fluorescent anemones will fluoresce without the aid of blue of Actinic fluorescent lamps whereas bleached anemones will appear white when not lit by a blue or Actinic fluorescent lamp.

When looking at an anemone you should make sure that the anemone has not got any obvious tears or wounds. Anemones seem to get bacterial infections quite easily if physically damaged to the extent that they are ripped or torn. Torn or ripped anemones that have become infected will often dissolve over the course of a few days. To avoid the risk of tearing the foot of an anemone its always better to purchase an anemone

Clownfish-Hosting Anemones in the Aquarium

By David Bloch

One of the most common questions asked by new marine aquarists when talking to an aquarium shop owner is, “Can I keep a clownfish and anemone in my aquarium?” The answer is usually yes which unfortunately is not necessarily the truth! Anemones, like corals, require specific conditions in which they will thrive and unless these conditions are provided, more often than not the anemone will die a slow death. The purpose of this article is to dismiss the myths about keeping anemones and describe the conditions required to keep them.

This article will be divided into two parts. Part one will discuss the requirements for keeping anemones in the aquarium and part two will describe the most commonly found anemones that are encounted in aquarium shops.

Part 1 – Care of Photosynthetic Sea Anemones

Choosing an Anemone

When going out to an aquarium shop to choose an anemone you should consider a couple of points before making your decision.

First and foremost, you should decide what species of anemone you want to purchase. This decision will depend upon the size of your aquarium, the amount of light over your aquarium and the layout of the aquarium. Different species of anemones reach different sizes and this must be considered when making a purchase. Different species of anemone are also adapted to different light intensities and as such, your lighting setup will dictate what species of anemone can be kept. It must also be considered that anemones will expand to a larger size than they will be in the aquarium shop. The layout or aquascaping of the aquarium will also influence the choice of anemone as different

they can squirt water directly onto the bulb which may crack the bulb and/or electrocute the clam.

Care must also be taken when replacing bulbs with bare hands (after they've cooled of course). Fingerprints on the glass envelope may cause a bulb to heat up unevenly when first turned on and cause it to crack. To avoid this, either handle the bulb with a clean, dry cloth or wipe the bulb with methylated spirits after handling. It is preferable to use the cloth because sometimes the bulbs break when screwing them in and the shards of glass are very sharp!

Bulb Orientation

MH bulbs come in two mount forms; horizontal and vertical. The way MH bulbs are made, a vertical mount bulb, will not run properly in a horizontal position and vice versa. The problems that stem from this can result in anything from incorrect colour temperature to bulb explosion.

Horizontally mounted bulbs normally have a "nipple" on the inner quartz tube that shows which side of the bulb should be facing up. There is a reason why a particular side of the bulb should be oriented toward the top and that is, due to the fact that the plasma arc in the bulb is an upside down "U" shape, the electrodes are deliberately pointed upward at an angle that is optimal to the arc geometry. If the bulb is oriented incorrectly, it will not run as efficiently, it's life will be shortened and the overall color temperature may shift due to incorrect burn traits. Standard, horizontally optimised bulbs with a curved arc tube, may even blow up if mounted vertically or even upside-down.

Switching On and Off

From an electrical point-of-view, it is not very difficult to maintain the arc in an HID bulb if the power is constantly fed from a cold startup. Most people who have MH bulbs will know, however, that if the power is momentarily cut off from the lamp, it will not re-ignite immediately. The reason for this is that a bulb at full operating temperature has built up such a high pressure inside

the quartz envelope that the voltage that can be supplied by the ignitor isn't enough to be able to create an arc across the electrodes. Consequently, it is necessary to wait anywhere from 10 to 45 minutes (depending on the type of bulb used) before the bulb has cooled enough to be able to re-ignite.
If left switched on, the bulb will eventually reignite, but the ignitor will be continually pulsing at 50 times a second until it does. Each pulse is around 2500 to 4000 volts and as you can imagine, a lengthened pulsing duration can shorten the life of ignitors as they are only designed to pulse for a short time at each start up. Many ignitors now have a long-life design, but it is preferable to avoid leaving the ignitor to pulse until the bulb starts. So, if you have a momentary power failure and your lights go out, turn them off, wait 10 minutes and then try switching them on again. If they still don't ignite, switch off again for 5 minutes and keep repeating this until they do start.
Due to burn characteristics, it is also preferable for the life of the bulb that it isn't switched on and off frequently and that it is given long burn times. The typical 10 hours per day that is used over reef tanks is perfect for long-life wear of MH bulbs.

Did You Know

…the first back-boned fish lived 400 million years ago in Scotland and Norway. They had circular, jawless mouths and fed by sucking water through this small orifice and taking whatever food particles it contained.
…sea fish constantly drink seawater but freshwater fish never drink.
…Manta rays can grow more than 9 metres across and on occasion have been harpooned. These fish are so strong that lines often have to be cut to avoid the boat being pulled under the water
…if a shark bites a sea cucumber, it quickly releases it and never bites one again due to the toxic secretion, Holothurin. 1 part in 600,000 will kill a 20kg shark and in the open seas, sharks will detect less than a lethal quantity and move away.
…Marlins, swordfish and members of the sailfish family are among the fastest swimmers in the open ocean, reaching speeds of 100kph

Spouses Dictionary of Reefkeeping Terms

By Charles DeVito (with input from wife, Laura)

Charlie DeVito is a regular contributor to the World Wide Web's Reefkeepers' Mailing List (speak to Nathan Cope if you are interested in joining). Charlie is a member of the Marine Aquarists Society of Los Angeles and specialises in "Nano" tanks. Nathan, and his wife Niloufar, met up with Charlie and Laura while visiting the US last year and they say the pair were real cards. Here is a sample of Charlie and Laura's own special brand of marine aquarium humour:

Venturi -- a term applied to any piece of equipment that will cost more than the monthly car payment.
"Live" -- a term used to denote high priced rocks, sand and other inanimate matter imported from halfway around the world that in most ways resembles the same matter you can pick up for free in your own backyard.
Metal Halides -- the reason we didn't get the new car.
Vroliki's Angel -- a reasonably priced dwarf angel fish.
Centropyge vrolikii -- a ridiculously over priced dwarf angel fish.
Check Valve -- the very pricey doohickey designed to prevent flooding the carpets with saltwater, which didn't work as the husband isn't a plumber.
Slime Algae -- often, this term has become synonymous with "the other woman". Whenever it is brought up, it becomes the subject of a great deal of time, personal attention and expense.
MASLA -- Masochistic Animal Slaves Living in Agony. Kind of a self-hinder (rather then self-help) group, this is a club where reefkeepers can go to validate the ridiculous expenses their hobby entails with similiarly deluded individuals. Gentlemen, the first step to recovery is admitting you have a problem.
Very High Output -- description of the sounds you made when the husband walked in and proudly displayed the 2" coral fragment he just bought for $200.
Head -- measure of depth pressure on a pump. As long as the husband is buying $200 specimens, that's all it will mean, too.
Iodine addtions -- required additive whenever something thrown at the husband in a rage over the flooded carpet gives him a cut.
Vital Gold -- required additive at birthdays and anniversaries to keep you from leaving your husband and marrying your fitness instructor.

Meetings – Social Calendar

March 31st Tony Fiorentino's house: **13 Andrews Court, Padbury**
April 28th Nathan Cope's house, **21A Norton Street, South Perth**
May 26th ???
June 30th ???

If there is anything you would like to know more about or anything you would like to add to the newsletter, perhaps you have a different view to those hearin, call or send comments to the editors, David Bloch or Nathan Cope. Remember, this is your newsletter.

***Attention**: If you are able to hold a meeting at your place, please let us know.*

MASWA Membership
Currently MASWA requests an annual $20 donation from members. This covers the cost of newsletters, drinks, nibbles and other costs associated with the society. Members will receive information sheets and discounts on some products. We request a $2 donation from visitors at meetings, and this entitles them to the next two newsletters after that meeting.

Friends in Common
David Bloch, Gary Bowman, Dennis Bozil, Alvin Chua, Nathan Cope, Andy Dolphin, Tony Fiorentino, Jim & Gloria Fletcher, Shaw Goh, Paul Groves, Peter Harris, Sid Harrison, Nick Holt, Kevin Horner, Frank Krause, Mike Hudson, Craig Lawrence, Grant Magill, Mark O'Malley, Michael Payne, Pam & Ken Pratley, Phil Searle, Renae Sradev, Ronald Tan, Chris Williams, Paul & Danuta Williams.

If you've paid your money and your name is not on this list, tell Andy! Members on the web should check they are on the web site members list. Thanks to all of you for your encouragement and support, we look forward to seeing you at the next meeting!

DISCLAIMER
The Marine Aquarists Society of WA is a name that we, as a group of friends with like interests have applied to ourselves for the purpose of information exchange. No one person, nor the group as a whole, can be held responsible for liablilites, injuries or other that may result either directly or indirectly as a result of our gatherings or the information exchange therein. The same applies to the information contained in this newsletter.