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Computers*

Step Into The Next Generation

Strange Waves

Ye Olde Mantis Shrimp

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"Great perils have this beauty, that they bring to light the fraternity of strangers." -- Victor Hugo

I now know why, after 1,500 B-rated movies, there will be no more Godzilla. He has met his match, and it is mantis shrimp.

Mantis shrimp, *Squilla* spp., like many marine crustaceans, prefer the dark crevices of coral reefs--the narrow and encrusted burrows of since-gone tube worms, the sharp and thin chasm formed from volcanic uplift on the shallow shelf of reef, the rough spaces between chitinous coral skeletons. They are not very big, perhaps 10" at a maximum, but they move faster than a barnacle retracting into its shell; faster, even, than a fish darting through its saline medium, and that with a good current behind it. And they're powerful, too. Reef divers call the dastardly beasts thumbsplitters because they can do just that. A recent experiment tested the impact of a blow by the creature's mantis-like claws and head to be only slightly less than the impact of a .22 bullet. It's fitting, then, that they hunt in one of two ways: spearing or crushing.

Perhaps, if left to its own in the vast tropical seas of the world, it would do little damage. Though it eats about everything, from the tiniest crustaceans, to anemones and coral polyps, to unaware fish, in a world as large as ours, with such solitary creatures, the balance of life is

maintained. Simply, they are not a problem in the wild--unless, of course, you're a diver who just happens to put his thumb in the wrong crevice at the wrong time. But a mantis shrimp, any one of the 300 species, is not something a marine aquarist wants in his or her tank, even at the smaller, more common sizes of one to two inches.

Oh sure, some of them are rather pretty, with deep reds and purples; and certainly they are very interesting to watch, as they dig burrows and move pieces of coral and such, but it's their potentiality which needs to be guarded against. In other words, they are destructive tyrants in the closed ecosystem of a marine aquarium. Godzilla's got nothing on these bad boys.

It had been only 5 days since I set up my 55-gallon marine aquarium. In doing so, I had acquired about 8 lbs. of live rock--5 lbs. of branch rock and 3 lbs. of worm rock. On the third day, as I was sitting hypnotized by the intricacies of the many invertebrates living on the rocks, something dull red caught my eye. I was puzzled, because I thought it might be a fish, but I didn't have any red fish--just two yellow-tailed damsels and two green chromis, and all of them are no bigger than an inch. I slowly moved to get a better view, and lo and behold, I caught the tail end of a shrimpy-looking creature as it darted into a hole and then, just as quickly, popped it's crawdad-like head out of a hole facing me. Yikes! That's a scary looking creature!

I had heard rumors about mantis shrimp, how they should be avoided at all costs, but I'd never actually seen one. It was evening when I saw this critter, and though I had my suspicions that it was indeed the mantis, no fishstores were open to take my frantic call. The next day I called the store where I bought the live rock. I described what little I had seen of the shrimp and was informed, bluntly, that it was the mythic beast of aquaria lore, and that I should capture and destroy it.

Of course, that's always the challenge, isn't it? Throughout history men and women have lost their lives fighting evil creatures. In medieval times there was the dragon, a most formidable opponent. In the days of the British Empire many a human was eaten, and gleefully I might add, by a roaming lion or tiger. More recently, natives on the western Pacific island of Komodo have lost life and limb to the giant lizard of the same name. And now, could we be facing the same dark fate with the mantis shrimp...?

The fishstore employee filled me in on the various ways to capture a mantis shrimp: put the live rock in a bucket and coax the invert out with some food, construct a trap using a plastic 2-liter bottle and a little ingenuity, pour carbonated water in the rock's cavity to force our many-legged foe out, or buy a commercial mantis shrimp trap and wait. All alternatives involved getting my hands precariously close to this thing.

Because I have no friend greater than the vastness of the Internet, I turned to AquaLink's help service and asked questions about the mantis shrimp, because I still knew precious little about my enemy. I sent the note out and waited with clenched fists by the computer. As quitting time

neared I had heard no responses: the deed was to be undertaken alone.

After work I made a few essential stops to prepare myself for battle, picking up tweezers, a baster, a 10-gallon tank, a 2-liter bottle of seltzer water, fresh shrimp, bologna, and a heart from the town of Oz. This raggedy lion's got goosebumps!

After a small snack--mine, not the shrimp's--I prepared the 10-gallon tank, mixing salt into the water and filling it about half way. I then removed the live rock, hoping the shrimp was securely in his small labyrinth and not wondering just then what human flesh tastes like, and set it into the quarantine tank. I grabbed a snippet of bologna with the tweezers and waved it in front of one of the many entrances to the interior of the softball-sized rock. Mantis shrimp, it is said, have a good sense of smell, so I figured that bologna would certainly be tempting. And it was, as I saw the red feelers and blue, pinpoint eyes of the beast come out of a hole. But as soon as he saw the tall body behind the long arm holding the tweezers holding the bologna, he quickly retreated.

Hmmm, this would indeed be a challenge. I set the bologna about eight inches away from the rock with a plan of action. If the shrimp would leave the rock to get the meat, I would snatch his home away and he would be stranded. But alas, my nemesis did not fall for the trick. So, I tried fresh shrimp and then brine shrimp, but all to no avail. Then, because I realized that glass can be seen through two ways, I put towels around the tank. Half an hour later, still no luck.

I was getting a bit tired of waiting, and the non-circulated, non-heated water was cooling rapidly--not good for the other, desirable inhabitants of the live rock. I decided to put Plan B into action.

I tentatively removed the rock and set it on a towel in the stainless steel kitchen sink, where the light is best for laboratory procedures such as this. I then cut the top off of the seltzer water bottle so I could fit the baster into it. Once everything was set up, and much of the trapped seawater had drained from the rock, I began squirting seltzer water into every opening I could find. After about six quirts, the reddish-brown shrimp began to crawl out. He was obviously angry, but survival--in this case, ironically--dictates that most animals cannot breathe carbonated water and live. As soon as I had a good fix on him, I grabbed my epoxy-coated tweezers and snagged the beast's head.

Boy! He was strong, resisting ably by using his curved lower abdomen and tail to latch onto the opening's ridge. I struggled with him for a minute or so, trying to pry him lose, and was finally able to dislodge him! But then the tweezers slipped and he was loose on the towel... twisting and rolling like, well, like a shrimp out of water. I quickly grabbed his whole evil body with the noticeably short tweezers and lifted him towards a waiting jar.

But as soon as I raised him, he slipped out of his mechanical binding and dropped to the kitchen floor. Time was of the essence, so I stooped down and used a wooden spoon to shove

the full one and a half inches of his body into the jar. With no lid, but no real worry that he would escape, I covered the prison cell with aluminum foil. And then, on second thought, I covered the foil with a heavy plate. And there he sat.

To attest to the toughness of these cockroaches of the sea (though, fairly, they more resemble centipedes), when I shook the jar the next morning, he moved in response. 12 hours of no saltwater and little, if any, air, and the beast was still alive! I must say, I sort of respect him; but must also admit that I had decided if he was still moving when I returned from work that day, he was gonna meet the business end of a very heavy mallet. (Sorry about the graphicness of that last line, but any good horror story, such as this one, has its bloodshed...).

When I returned to work I had a slurry of e-mail messages from AquaLink volunteers--all of them helpful. One in particular, from a saltwater hobbyist in Greenville, South Carolina, deserves to be quoted in full:

"That mantis shrimp will kill every fish in your tank once he gets big enough. They are nasty predators. If you know what piece of rock it's on, and sounds like you do, pull it out of the tank and put it in a bucket for 20 minutes or so, see if he comes out. Take drills, whatever it takes, to get rid of him. He will eat everything in your tank.

"Traps work too, but it may be easier to put the rock in the bucket. I'm not joking about the drills either. Coat hangers, whatever is needed. And be careful--he can slice your hand open pretty good.

"And yes, there are things that will eat him, such as triggers, but they will also munch on the rock itself. Octopuses are also good for this, but no other moving critter can live in an octopus tank.

"I had a mantis shrimp last year that killed about 8 fish before I caught him (latched onto the side of a clownfish)."

Yikes! I take that back, I've got no respect for the salty vampire! I went home and plopped him into a cup full of freshwater, and he perished shortly thereafter.

Prologue:

I've learned a bit more about mantis shrimp since my first week returning to the hobby. First, it seems that the easiest way to catch the shrimp, without losing a finger or two, is to place the humble abode of his live rock home--if possible--into a bucket of freshwater. After a half-minute or so, he will scramble out, and the live rock can be safely placed back into the aquarium. If you don't know where he's living, but know you've got one, then I suppose the mantis trap--in one form or another--is the way to go. Second, it seems that home aquarists do enough indirect damage to coral reefs that we don't need to purposefully kill any creature--even one as

formidable as the mantis shrimp. Many fishstores will gladly take or even buy a live mantis shrimp from you, as they are interesting creatures to watch. I saw one in my favorite fishstore just the other day for \$15--he had hitched his way in on a piece of Florida live rock.