Rounds Animal Health Department Medical Rounds "medicine for all"

NATIONAL MARINE LIFE CENTER Caring for Stranded Marine Animals

Notes Veterinary Research Department Under the microscope

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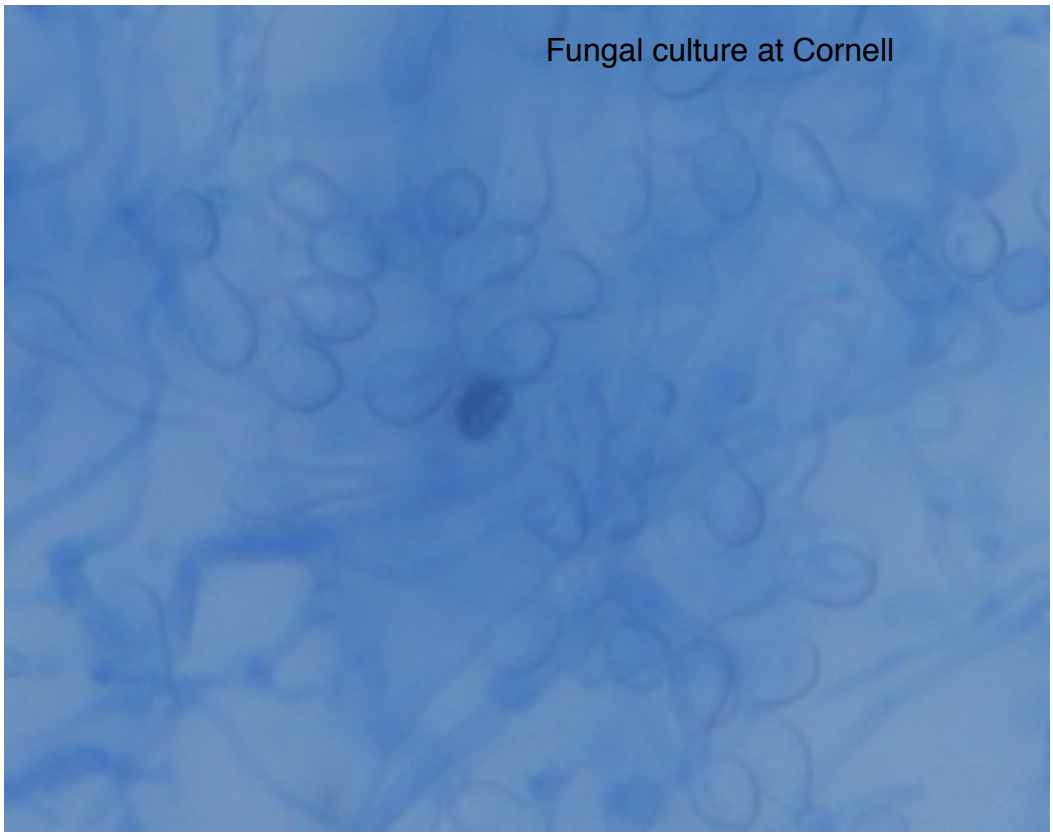
Headlines News: Fungal collection is Fruitful

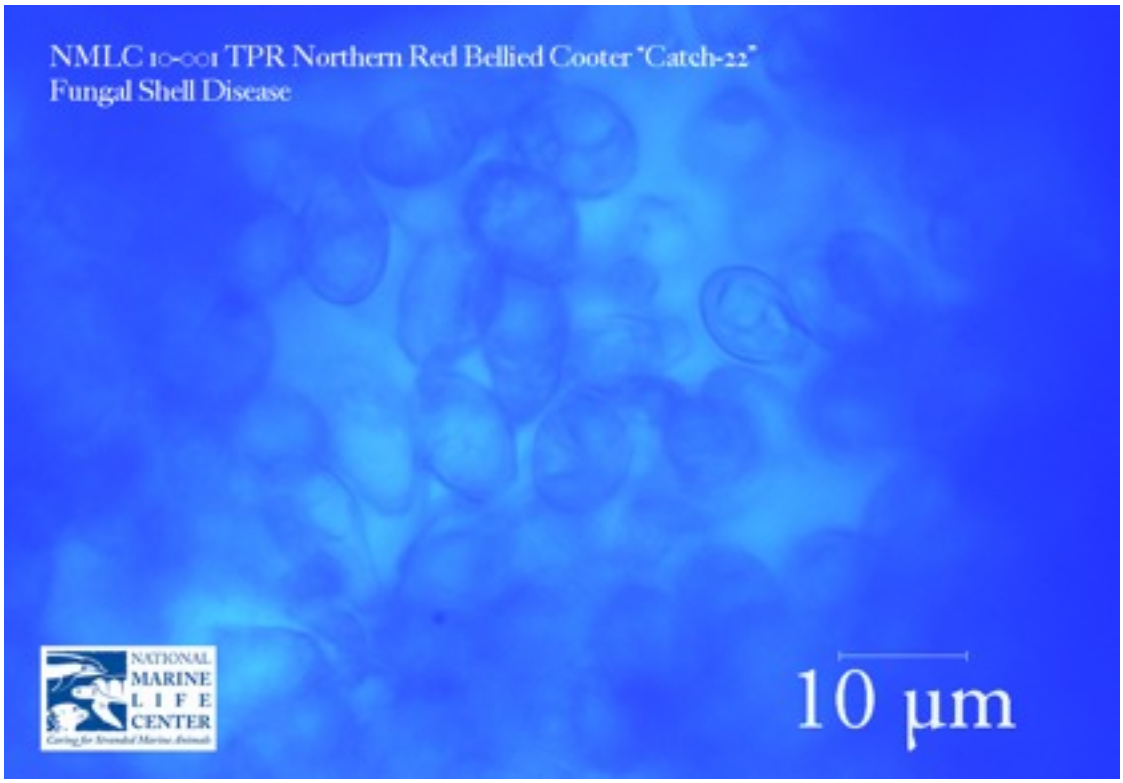
now lets not let the data rot

Our latest attempt to figure out what is causing Catch-22's fungal shell disease, we scraped the affected keratin onto a plethora of special fungal media, many with antibiotics to discourage the overgrowth of bacterial colonies which often obscure the slower growing and more fastidious fungal elements. And Cornell has been hard at work piecing this together. Over 50 Gram stains reveled that a multitude of bacteria are present on the shell of aquatic turtles (just take a look at the total coliform counts and you know we have plenty of bacteria in the water). Two filamentous fungal organisms have been isolated, *Fusarium solani* and an isolate similar to *Aphanoascus*. The sterile scrapings (not inoculated plates) had one filamentous organism, which is very interesting because of it's appearance under the microscope.



Fungal culture at Cornell

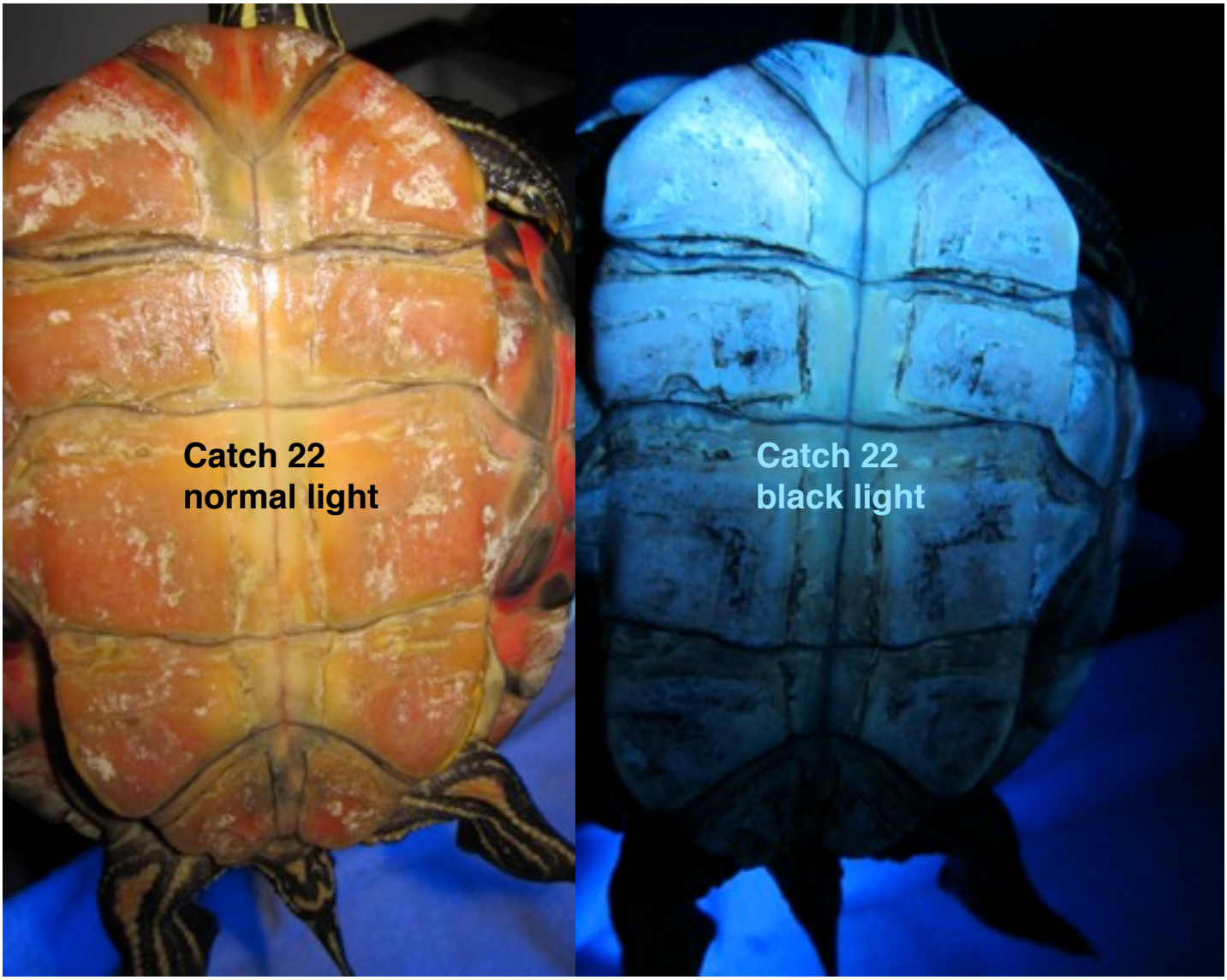
look familiar ? It does to me too. Take another look at our cytology preps.



So far the isolate is consistent with an identification of *Chrysosporium* whose sexual stage (telemorph) is *Aphanoascus*, hummmmm, and molecular confirmation is pending.

What does all this mean ? The *Fusarium* is interesting but I feel it may be a red herring, we've had *Fusarium* cause skin abscess following a bite wound (e.g. Claw), but as a primary shell pathogen I'm not sure. Why did it not come up on the PCR tests from this histopathogy ? Or for that matter why the discrepancy at all. The acid test is to match the clinical living fungal samples with the fungal DNA pulled from below the surface in the sterile world of the tissue block that was used for the morphological diagnosis (i.e. *Trichosporon*). Honestly, I don't know, but I'm betting on this sample being the etiologic agent for this particular fungal disease. Cornell's fungi looks just like the clinical samples we have found on multiple occasions. I think we will have a much better handle on the situation once the initial molecular work is done, even better though, because this ID comes with the fungus living in culture where we can have advanced characterization preformed at the Fungal Lab in Texas.

Stan has a good idea last week that we put to the test. "what about using a black light ?" I informed Stan that veterinarians often examine the skin of cats and dogs with suspected fungal disease with a black-light as some types of fungus infections will fluoresce an 'apple green' and help guide the collection of samples for culture and prompt a preliminary diagnosis pending the results. So, we tried. Stan also had said black-light (in the 365 or so nanometer range) and we



looked at all the cooters. We found fluorescing fibers (a brilliant blue) just like CSI, but these came from our clothes and some light color green in the healing scutes lesions of the hatchlings, and flaking keratin but no true positive fluorescence. Similarly Catch22 was negative. Not all pathogenic fungi fluoresce but it was a good try.

Clinical Update: Teanna gets the green light

next stop Terrapin Station

Our final evaluation of Teanna involved a physical exam, blood (on in this case hemolymph or hemolymph contaminated blood) analysis (CBC, SCP, blood gas analysis, ionized calcium, and lactate levels), a behavioral analysis, and case review, and survey radiographs were also evaluated.

Our findings: I gave the green light for release. Was everything 100% ?, no of course not, but we must understand what we learn about our evaluation and what we are trying to accomplish.

First and foremost, these animals only help their wild population if they are released back into the population and can contribute to the benefit of that population (reproduction). This also means that they are not carrying some disease back into the wild resulting in a net harm to the population, and is the reason for the rigorous attention to quarantine and controlled handling and cleaning of all the animals at NMLC. We must expect the animal to be able to find wild type prey items, avoid predators, and be reproductively active. We should conservatively screen for what I like to call the Darwin Award, which examines the case for evidence that the animal stranded because it was inherently unfit and thus its return to the wild would serve no benefit.

This case is a classic negative interaction with human development, a passive human interaction, and an accident. We're happy to wish Teanna well, go forth, and multiply.

Cooters . . .

down to the wire

Our smallest cooter is kinda runtish, clearly a step behind the group, but with only a few millimeters to gain in carapace growth to make the cut off, I think the little one can do it.

The shells look great, and this batch is also ready to go.

C Roger Williams VMD

Sea Rogers Williams VMD
attending veterinarian and director of science

[STAFF: Kathy Zagzebski, Bridget Dunnigan, Kate Shaffer, Adel Raphael]