



Video transcript  
**Observing Nematocysts**  
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- Today I'm going to show you how to look at nematocysts under the microscope.
- Nematocysts are hydroids' stinging cells and looking at them discharge and undischarged may be very important to identify certain species.
- We are going to need tweezers, slides, cover slide, distilled water and a microscope.
- This is the colony we just collected in the field. I'm going to get just a few polyps.
- The polyps are transparent, I can transfer them onto the slide.
- The darkened parts you can see are debris on top of the colony, and the transparent polyps are right here.
- You can add some drops of water and then put the cover slide gently on top of the colony.
- Now we are ready to look under the microscope.
- This is the undischarged nematocysts, you can see the shaft still inside the nematocysts and the tubules all coiled inside.
- Some nematocysts are very easy to explode and discharge the tubules. Some are very hard especially the very small ones. So sometimes you need to apply some more pressure to get them to explode, sometimes you can add a little bit of distilled water.
- The difference in concentration between the salt water and the distilled water should get the cell to explode.
- So you can get a pipette and you can release a few drops of distilled water close to the edge of the cover slide.
- The distilled water will migrate and will enter and contact the polyp.
- You can let it sit for a little bit and then you can absorb the excess water with a kimwipe. You can put it right at the edge of the cover slide and apply some pressure, and we are ready to go back under the microscope.
- You can see a discharged nematocyst. you can see the empty envelope, you can see the shaft with the spines and the long tubule.
- I'm going to change magnification so we can see the shaft and the spines.
- And now we can try to identify the nematocysts using appropriate keys.
- You will find nematocysts keys in the protocol below.

