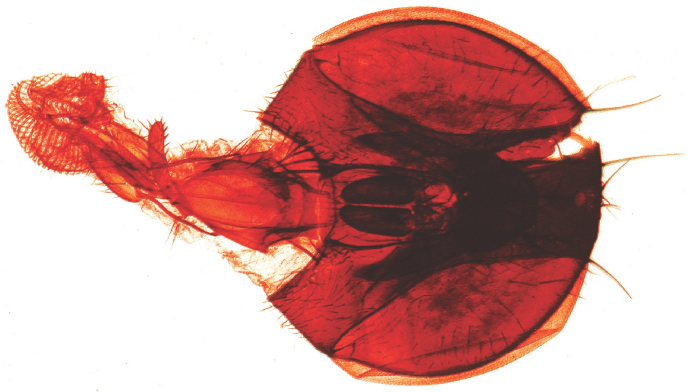
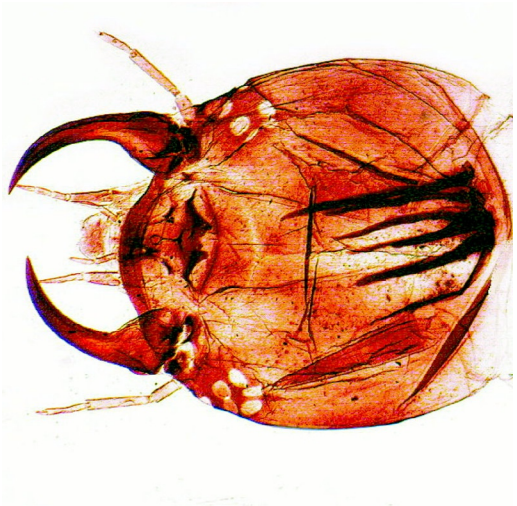
Insects and Sea Creatures by Sawyer Winn

Throughout my venture into microscopy, I have found many types of specimens that are unique and interesting. With so many different types to look at and photograph, I have found two “groups” of specimens that interest me a great deal. These are insects and sea creatures. The insects I used were prepared slides of cross sections, or dried specimens. With millions of insect species existing, there are infinite possibilities for what you can find. This is the main reason I enjoy viewing insects under the microscope, and the same reason applies to sea creatures. These are more commonly found as larger specimens, so these photos are normally more three-dimensional than cross sections are. With so many diverse photographs that can be taken, here are some that I’ve been working on that show why they are so fascinating under the microscope.

The first photo is of a common housefly head and its mouth parts. Flies regurgitate their food, using enzymes to break it down. The proboscis of the fly is on the left, and this is used to drink the regurgitated liquids. Hairs are also a very common attribute of insects, and it was very surprising to me that so many insects had tiny hairs all over their bodies.

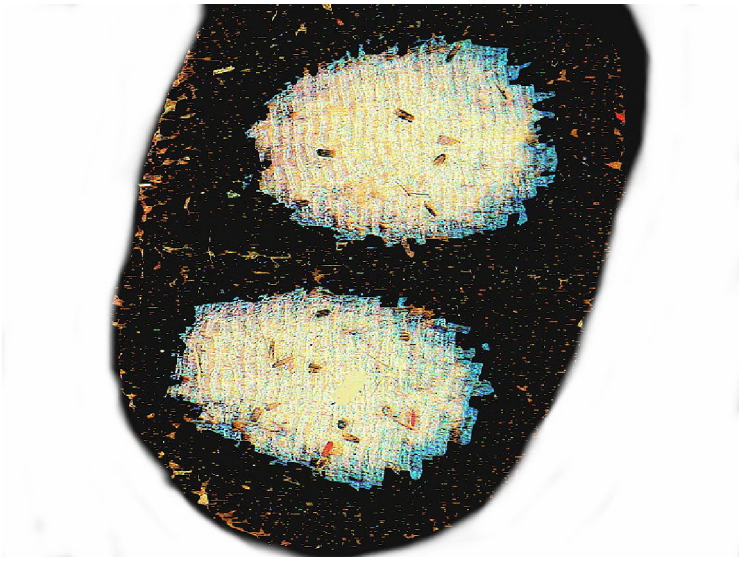


The next photo is of a water beetle head. As with the previous picture, many small details of the beetle can be seen, with the pincers, antennae, and the eyes being showcased.

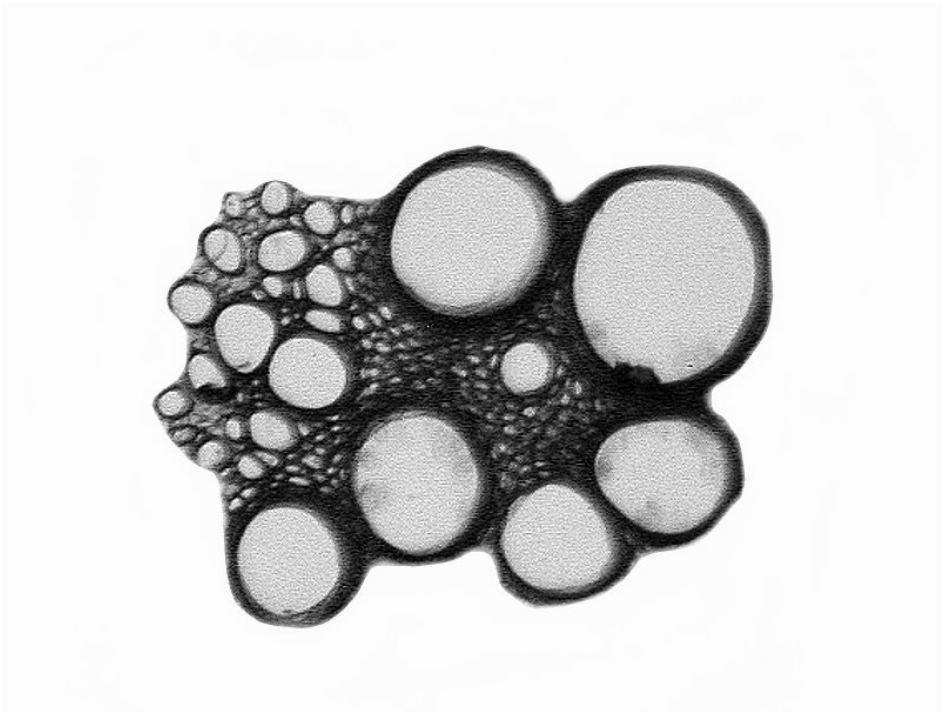


This photo is of a mole cricket leg. These are a large species belonging to the same family as crickets, grasshoppers, and locusts. They can grow to as long as 2 inches, and are covered in thick hair, which can be seen in this photo.

This is a butterfly wing close-up. The scales can be seen, and each one has a unique color, with the white-blue ones in the middle being very iridescent. The specks that are all over the top of the wing are scales that have fallen off. I attempted to clean these off the wing, but there were so many, thousands in fact, that more scales would fall off every time I made any progress.

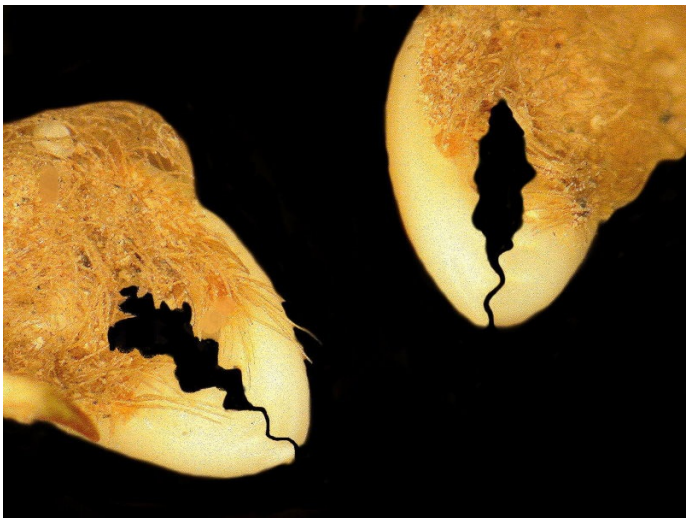


This picture is actually not from an insect. It is a cross section of a squash stem. The middle of the stem had 6 of these clusters around it. They look almost like spider eyes to me, so I thought they would be a fun addition.

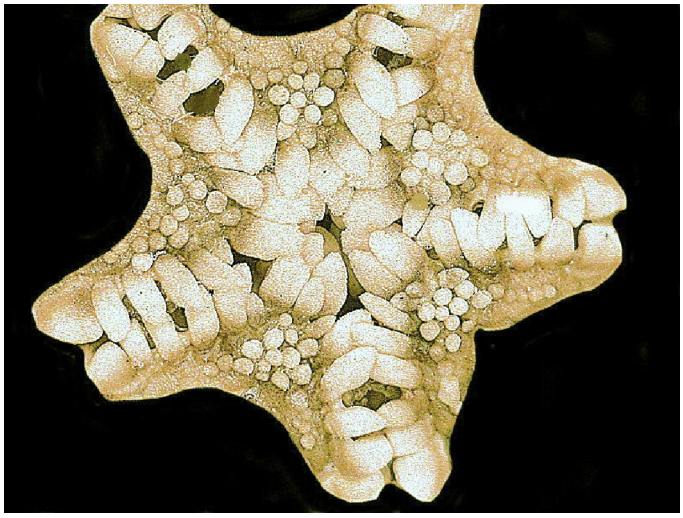


Now we move onto the sea creature section. The first one here is a shell that has fossilized over time. The spiral structure is quite nice, and the inclusions of the different minerals makes the colors and texture very interesting.

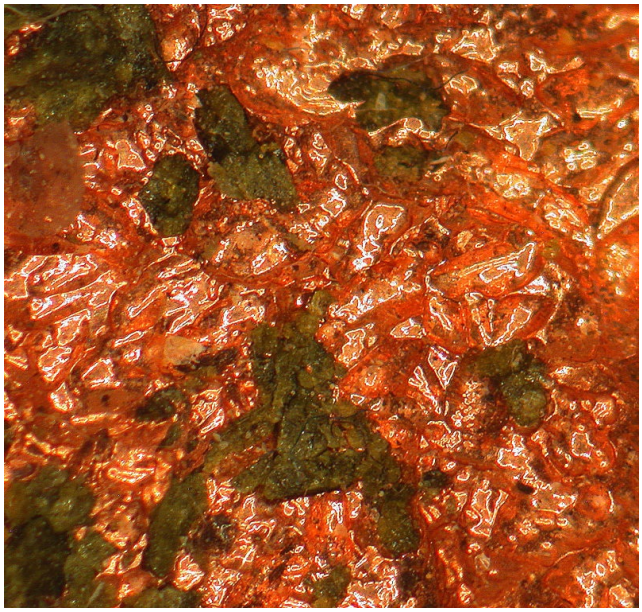
These are sponge crab claws. This crab was about 1.5 centimeters long, with thick hair-like structures all over its shell. These crabs cut pieces of sponge they find in the ocean, and then shape it into a “hat”, that they wear on their shell as a sort of portable shelter.



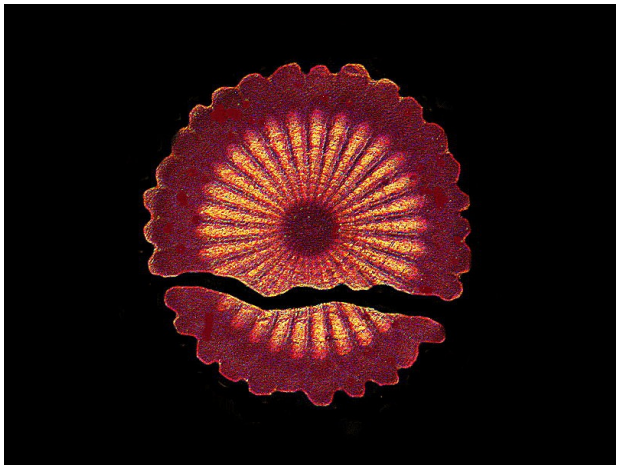
Next up is the mouth of a brittle sea star. Sea stars are a type of echinoderm, like sea urchins and sand dollars. These types of mouths are very common throughout many echinoderms, and are centered on the bottom of the animal. Even though it looks like this animal has dozens of teeth, it actually only has 5! The teeth are obscured by the five rows of spines that run towards the center, forming a nice pentagonal shape.



This one is a piece of native copper. The surface of the crystals in it sort of look like the surface of a rock under the ocean. The green spots are patina, which is a mix of oxidized copper compounds. Patina is also well known for covering the Statue of Liberty. I think they look like small bits of coral or sponges growing on the surface of a rock, so this picture works well with the theme of "sea creatures".



The last picture is of a sea urchin spine cross section. The crystals in the spine make sectors around the center, radiating towards the edge. These crystals run the entire length of the spine, forming long stacks that firm the structure of each spine. The colors in this one were from the stained slide, and slightly enhanced during the editing of it. The large crack in the bottom was also a feature of the slide, but I kept it to make the picture more unique.



Finding, photographing, and editing these specimens was a very rewarding process. The complex details in each one gave me plenty of work to do, and finding ways to make the pictures showcase each unique part was a fun challenge. They aren't perfect, but I still enjoy looking at these images and finding new patterns and details within the specimens.

Comments to the author welcomed, via Richard Howey,
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