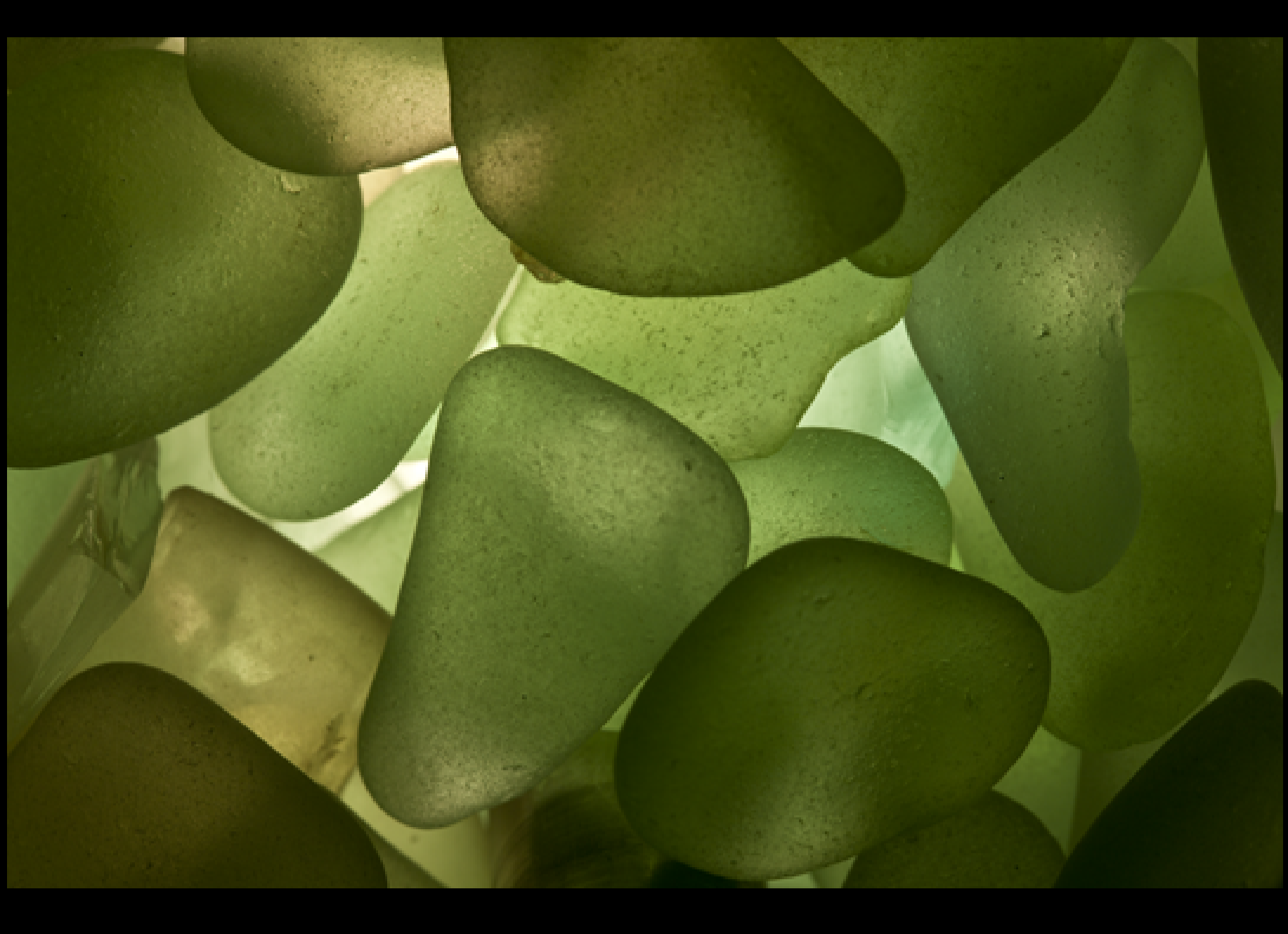
Photographic Exploration of Sea Glass

By Josephine Wyman



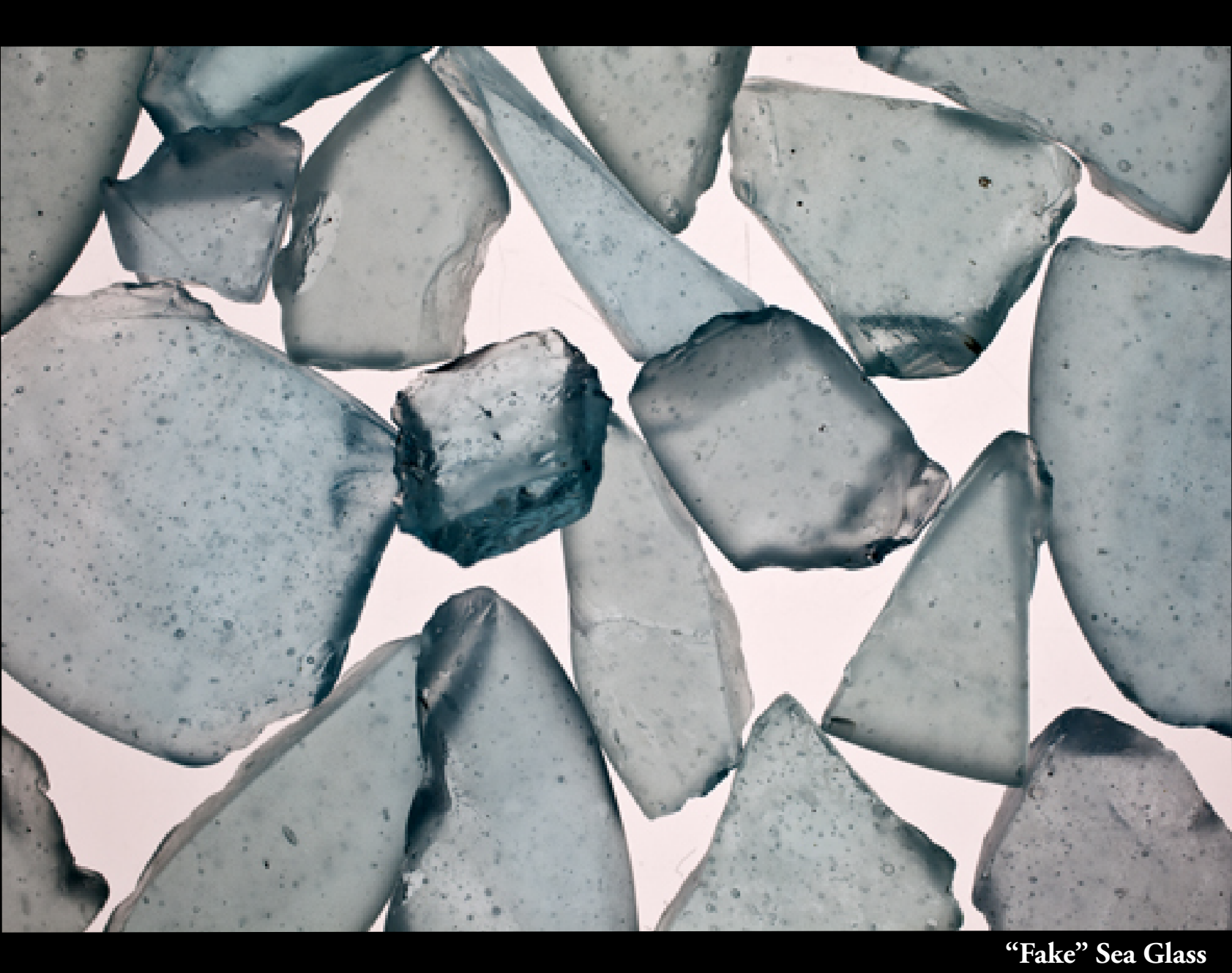
What is sea glass?

Sea Glass can be found in oceans, lakes, rivers, and any body of constant moving water that can tumble the glass into smooth frosted pieces. By rolling around with the rocks and waves, whole bottles and other glass items that are discarded in the ocean break down into smaller pieces. Sea glass (also known as "mermaid tears") comes from the ocean, where beach glass comes from fresh water. The term mermaid tears comes from many years ago. It was said that every time there was a shipwreck and sailors would drown, the mermaids would cry and their glass tears were later found on the beaches.

Why is Sea Glass So interesting ?

Collecting sea glass is becoming more and more popular in the recent years. Sea glass collectors are known as "Beach Combers". There are clubs, books and online groups where people come together and talk about their own sea glass, where the best sea glass finding beaches are and how to determine the ages of some of their pieces.

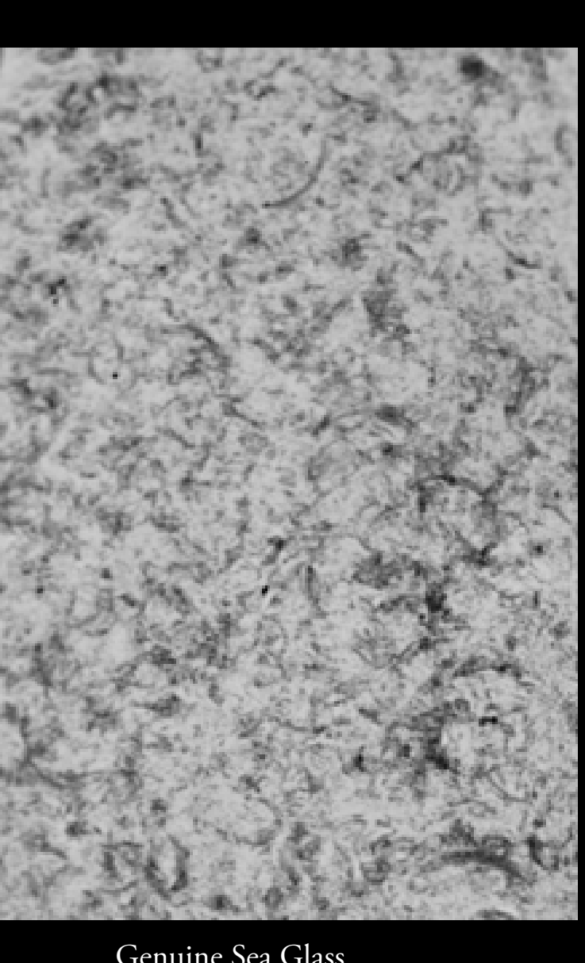
Every piece of sea glass has a history; this is very intriguing to a lot of collectors. Some sea glass can date well over 100 years old. Depending on where the sea glass was found, the color of the sea glass, and the special "C" markings, the sea glass can be traced back to its original form and date. A lot of the sea glass is made from bottles, windows, windshields, jars and plates. Some people display their collected pieces in clear glass bottles throughout their home, displaying their treasure. A lot of people are making beautiful jewlery with their sea glass as well.



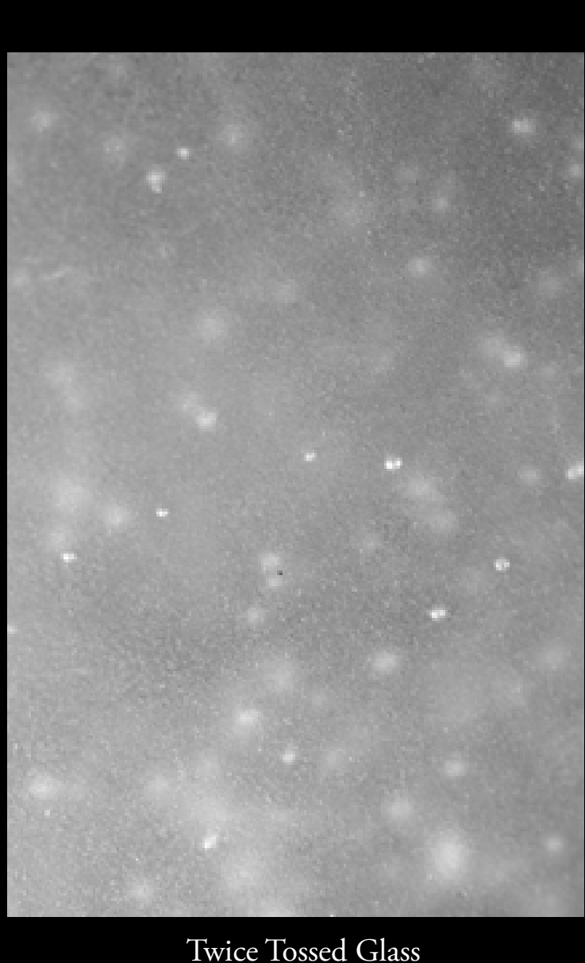
"Fake" Sea Glass

Artificial Sea Glass

The increased interest in sea glass has caused some people to create mechanically produced "sea glass" that resembles genuine sea glass. Some collectors and jewelry makers will purchase sea glass instead of taking from their own collection, or sometimes just to add to their own collection. Extremely rare pieces and colors will sell up to $1,000. The mechanically made sea glass shows no sign of pitting or unique markings that genuine sea glass has from being tossed around in sand and water for several years.The beach combers have developed a way to distinguish between real sea glass, and the "twice tossed" or "craft glass" which is artificially made sea glass that has been placed in a rock tumbler. Although the artificial glass may appear to have smoothed edges, there are several other ways to detect if it is genuine, or twice tossed glass. The artificial sea glass is lacking the small etches that the water and sand carves into the genuine sea glass. It usually more smooth and usually round in shape.

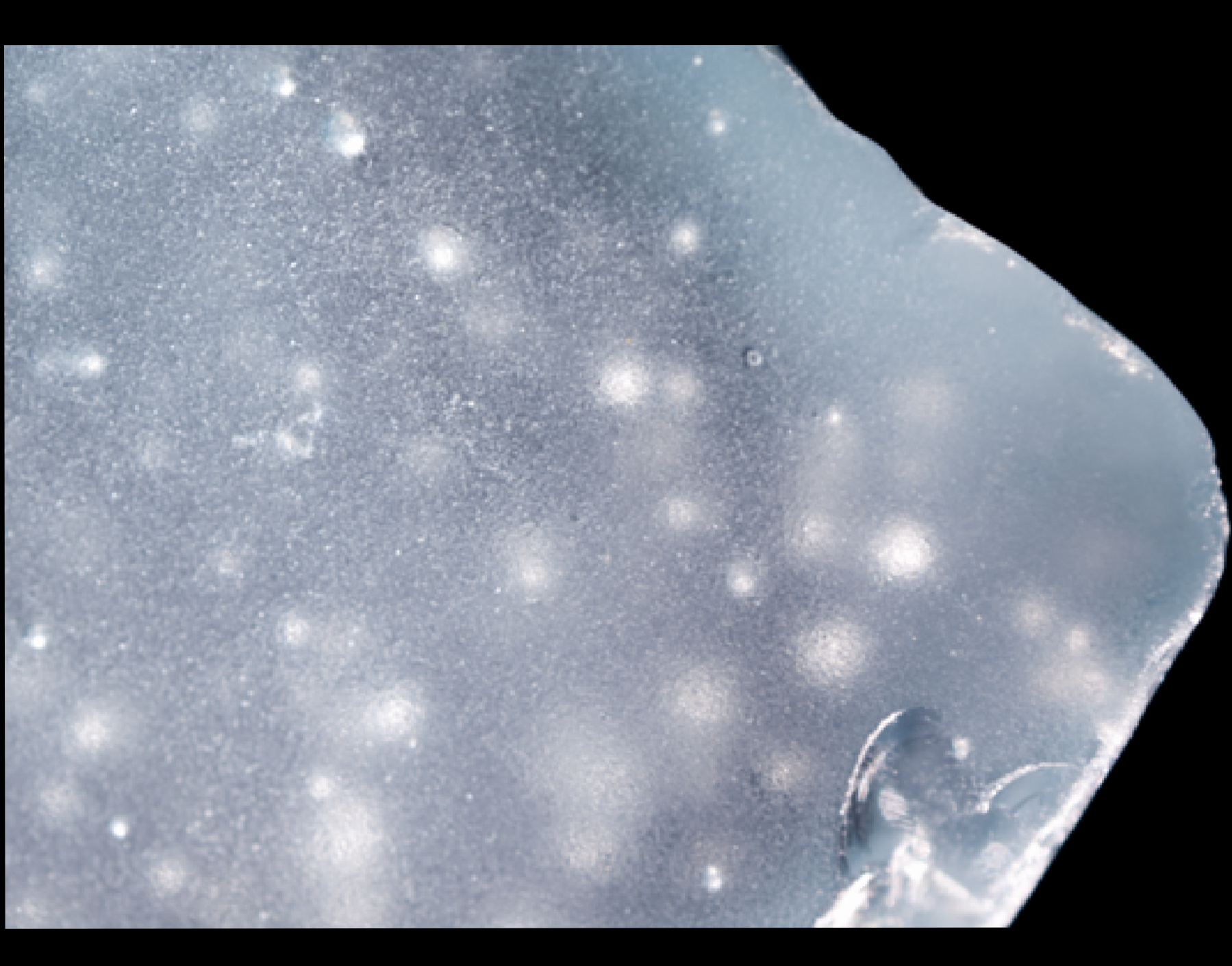


Genuine Sea Glass



Twice Tossed Glass

Scientific photography has settled many discrepancies in the past in terms of proving if something is genuine or artificial. Through this photographic exploration, scientific photography can once again help to visually distinguish the details. These markings found on the genuine sea glass can be seen with a cross lighting set up (this lighting technique is further explained later in this article). Using the same lighting, you are able to see the flat surface of the artificial sea glass. Scientific photography does not alter the sample or specimen in any way. There are techniques that are used to be able to view what is usually invisible to the human eye. These two comparison photographs, shown above, were captured with a 50mm Canon macro lens.

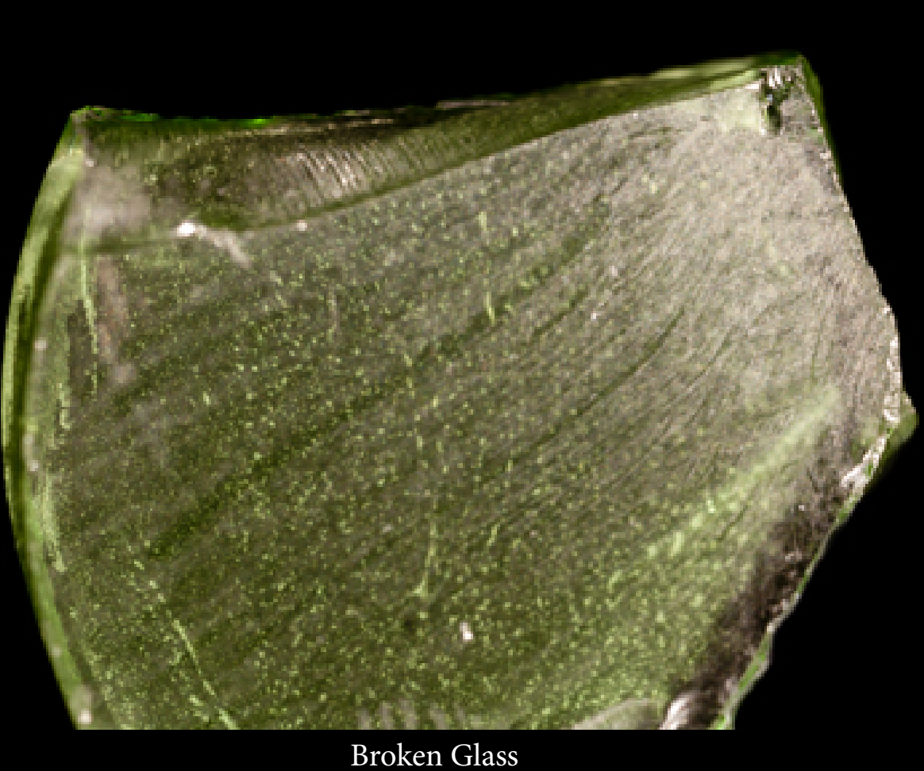


Although the artificial glass may appear to have smoothed edges, there are several other ways to detect if it is genuine, or twice tossed glass. The artificial sea glass is lacking the small etches that the water and sand carves into the genuine sea glass. It usually comes in larger sizes, and lacks the "frosted" look.

What makes it Sea Glass ?

There is a difference between the beautifully made sea glass, and shards of glass that you may find littering the beach. Research on sea glass has shown that glass has to spend up to forty years in the water to officially become sea glass. By being in the water for an extended period of time, genuine sea glass goes through a "hydration" process. The minerals within the water react with the materials used to make the glass.The materials used to make the glass (soda and lime) slowly leave the glass as a cause of the minerals within the water. A lot of sea glass will have a shiny or sparkling appearance, This comes from the deposits of mineral left on the glass.

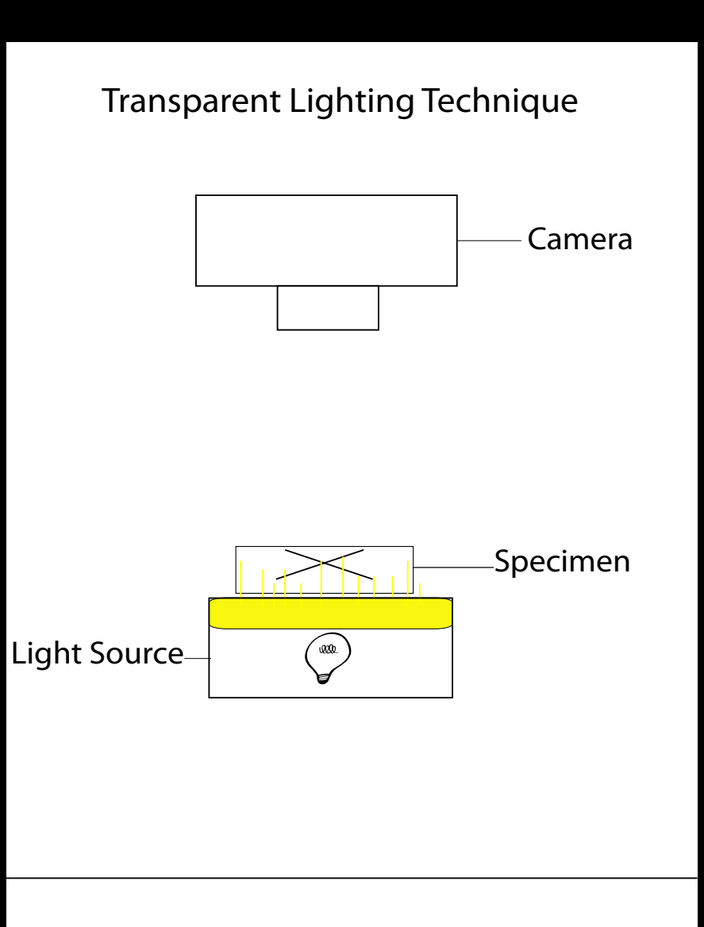
Sea Glass



Broken Glass

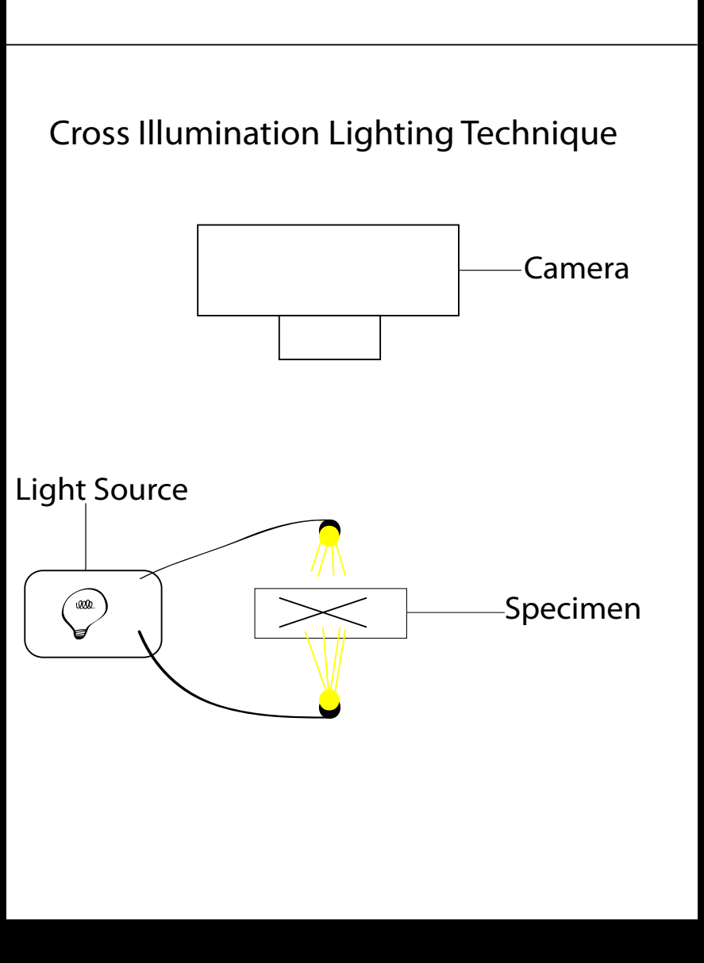
Lighting Techniques

The pictures were captured using fiber optic lighting and black velvet as the background to enhance contrast between the background and the sea glass. The camera was mounted on a copy stand facing down. The magnification with these images range from 1X to 6X. With some of the images I captured, I photographed several different images while moving the working distance (the distance between the subject and camera lens) to gather as much information as possible on the sea glass. When working in high magnification the Depth of Field is harder to achieve. Using this technique of gathering multiple photographs, I stacked the images in the Helicon Focus software providing the images with more Depth of Field and detail.



Transparent Lighting Technique

Transparent lighting is used to illuminate the internal structures of the sea glass.



Cross Illumination Lighting Technique

Using fiber optic lighting to show the contrast on the surface of the sea glass.

Fiber Optics Cross Lighting

Transparent Lighting

Equipment

Canon 5D Mark II Body
50mm/65mm/100mm Canon Macro Lens
38mm Thimble lens
Bellows
Fiber Optic Light
Lightbox

About me

My name is Josephine Wyman. I am currently attending Rochester Institute of Technology, majoring in Biomedial Photographic Communications. Expecting to graduate in 2012. I am interested in photomicrography, forensic photography and medical photography. I grew up in Western Massachusetts. After I graduate I plan on getting a job and moving to Boston, Massachusetts.

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