Matt Braun's Reflection for Leg 4

My name is Matthew Braun. I am a student at the University of Southern Maine in Portland, Maine. I have been on the forth leg of the Voyage of the Odyssey, 2010 covering Bayou le Batre, AL, into the Gulf of Mexico, and back to Biloxi, MS.

This leg we had a day that we got 11 samples in 11 hours. This meant that we all spent 11 hours straight out in the hot sun (with no breaks) getting them. We were so happy and felt very accomplished. But, this team has always been very hard-working and we push ourselves very hard. Lately, we had stopped the boat at 7pm every night so that we could all eat dinner together and talk about the day. At this dinner, we all talked about how pleased we were with our progress so far. Half joking, one of the team members challenged us to break that record the next day. We hoped we would but it seemed unpractical.

The whole 2 weeks that we were out at sea this leg, I had been on first whale watch which required me to get up at dawn for the first 2 hours of light. This next day, I awoke 30 minutes before dawn to what sounded like horses hooves galloping on the cement. Sure enough, I knew that this meant whales, lots and lots of whales. I climbed up to the mid level platform 40 feet up the main mast to spot them. A few minutes after I got up there I spotted the first whale blow. I called down to the captain and told him to wake up the rest of the crew. Our two biopsiers, Johnny and Rick, assumed their positions at the bow, crossbows in hand. Two more people scampered out after them; Sandy with a sheet of paper to log the sighting and the biopsy with GPS coordinates, time, and location of biopsy taken, and Carolyne to photograph the dorsal fin and fluke to get an I.D of the whale. Ian grabbed a video camera to get some footage of our biopsy process and came to relieve me from the platform; the team would soon need me on the ground as I had become one of the two new cell culturists when our first one headed back to Maine for soccer.

The first biopsy was taken 10 minutes after sunrise. I quickly scooped it up with the net as it floated down the starboard side of the boat. When I pulled it up into the net, I yelled the arrow number and the fact that it was a good sample to the data recorder. Then I rushed down to the lab to begin processing it.

Let me first say that whale skin is very tough. It is best described as the toughness of leather. Once the sample is collected, I cut it up into pieces, which can be difficult to do even in a stationary lab. This makes things even worse when the waves are rocking, usually in unpredictable ways. I cut the blubber off in 1 piece, cut the skin off into 2 pieces, and left just a little bit of where the skin met the blubber. The living whale cells are in this area that we call the interface. The rest of the skin and blubber is frozen down for later analysis. A little while after freezing down the three pieces, I begin to chop and saw away at the interface, trying to cut it into the smallest size pieces I can. This normally takes me 5-10 minutes, but can take me up to 30 minutes, just to cut up a piece the size of a pencil eraser. I do not use just any knife to make these cuts, either. I use a scalpel (which you probably know is tremendously sharp.) This is our most

important piece as this is where all the cells are living. We can actually grow whale cells from tiny pieces of this interface and develop cell lines for our lab and the world to do experiments on. It is truly remarkable. Once the pieces are small enough, I place them into a flask and into an incubator set at the internal body temperature of a whale: 33 degrees Celsius. Then this whale has been successfully processed.

It had been 2 months since I came on board the Odyssey. Even if I am inside, and do not have a visual of the whales, I can tell when whales are spotted and when the whales dive just by the sound of what the motor does. I kept a radio with me in the lab at all times, as it is crucial that our team communicated with each other. It was simply too hard to hear just our voices over the wind, the waves, and the motor. When I heard the call "whale blow" and the distance and direction from us, and then heard Captain Bob put the engine at full throttle, I began to rush to finish that first sample that I was working on. I knew very shortly someone from the team would be running me down another sample and I would have to start all over again. This process went on for a few hours, which meant I was doing nothing but cutting pieces of whale skin up for 2 hours. Talk about monotonous. Johnny, our primary biopsier, called over the radio "it fluked" This was a disappointment to the team as it meant that we could spend up to an hour waiting for the whale to surface again.

I had just finished processing the sample I was working on and I was relieved to get a break. Finally! I rushed upstairs hoping that this was enough time for me to see some whales before I had to go back down to the lab. Suddenly Dr. Wise came running, meeting me on the stairs. He had a dish in hand. "I have just enough time to do nothing!!," I shouted with a tone of despair. I hadn't even realized that our biopsiers had taken a shot. Neither had he until he heard "arrow in the water!!" Frantically dashing around the boat looking for the net, he was able to scoop up the arrow before we passed it. I guess it was time to start processing again.

On this particular day, I spent a few hours in the morning sitting on a backless chair in the lab cutting up tissue as sample upon sample was rushed down to me. My only break was that one time that I thought I would have time to do something, anything but cut up whale tissue. It was a trade-off being inside: I had the cool breeze of the air conditioning blowing on me, while the others were in the hot, gulf sun. However, they got to experience all of the whales, the entire whales, while I only got to see a piece an inch long of each one.

I was tired of processing tissue and Dr. Wise said he would take over for the next few samples. He and I manned the arrow and dart tips, the net, and the lab interchangeably. I would finally get a chance to see some whales! He processed some and must have gotten tired of it, too, so he handed the lab back over to me once again. I finally finished the first part of all of the cell culture work and I went up on deck. When I say the first part, I am referring to everything but cutting the interface into pieces to grow cells from.

This had to sit for at least half an hour in a mixture of saline solution and antibiotics to cleanse the sample before it could go into flasks.

When I got up to the deck, I found the team going back to retrieve an arrow. Normally our policy had been if there are whales in front of us, we continue to follow them and come back for the arrow after the whales dive. I looked forward of the boat and saw a group of whales, but knew that they chose right in going back for the biopsy. I will tell you why.

The previous day when we had 11 biopsies we ran into a scare with one of our sample retrievals. I had just come up from processing a sample in the lab when I found the team freaking out. We were not able to reach one of the arrows because it had been too far off the side of the boat. That was alright, as it was a common occurrence. When this happened, we threw a life ring as close as we could to the arrow so that we could go back and find it later. Normally, Captain Bob would turn the boat around and we would go and retrieve both items before they got too far behind us. However, on this day we had been following a large pod of whales and so it made more sense to try and biopsy them than to retrieve the arrow and risk losing the whales. We had lost the sample around an hour before I came up. It could be a few miles behind us. Oh shit!! This arrow had a sample in it; we were positive about that. We would not stop until we found it.

We turned around and tried to retrace our steps, which was a little bit easier seeing as we had a navigation system. Nonetheless, it would not be an easy task. Out here in the ocean everything was miniscule by comparison and could so easily get lost among the vast space. I ascended to the crow's nest about 70 feet up in the air; the view was astronomically better from up there. Captain Bob climbed up the mizzen mast (the back mast) so that he could search as well. This was something that the captain rarely did unless it was absolutely essential. The arrow could have been in a 2 mile radius in any direction, so it was crucial that everyone looked. I hadn't realized, but we actually had 2 life rings and 2 arrows in the water and none of them were next to each other!! An hour ago when the rings were tossed, they were close to the arrows. However, with the wind speed and the current of the waves (even though they were small), all four items were likely to be spread out. We searched high and low and circled around until finally I spotted a life ring. Hooray!! We found it. The arrow that was supposed to go with it was nowhere to be found. Oh shit. Our rule was that we never picked up the ring until after the arrow was in. All we could do at the moment was mark the position of the ring with our current latitude and longitude (for easier access later), and carry on. We did a circle and found the ring again, but still no arrow; no second ring or arrow, either. After 2-3 hours of looking for it we found one arrow and spotted the other life ring. It was not the arrow that we had a sample in, though. The problem was that we did not know which arrow went to which ring. Thus, we left both rings in the water. 30 minutes or so later I spotted the other arrow and we scooped it up along with both rings. Thank God! All of our panic had ceased and once again I found myself on the way back down to the lab to process it.

The same day that we had biopsied 18 whales in 5 hours, we also had a lot of other excitement. We were all extremely pleased with how much we got accomplished, so we figured that a break was in order. We were hungry, thirsty and tired, and Dr. Wise suggested that we take an hour before we continued looking for whales. No sooner than that call for lunch, someone spotted something floating a few miles off in the distance. We headed for it. It turned out that it was our most exciting creature yet: a big piece of sea trash!! Capt Bob grabbed it with the gaff (a long pole with a big hook on the end) and noticed a bunch of small fish underneath. Johnny tried to catch one with a hand net. Score! He caught a tripletail. At that point, Ian spotted a school of mahi mahi from the mid level platform. These fish were very large and brightly colored with blue and green mostly. Mahi are very tasty and I knew that we had to catch one. Johnny continued his method of collecting the smaller fish and was able to get three triggerfish, two lesser amberjack, and one tripletail in all. Captain Bob, just as interested in the Mahi as I was, joined me on the bowsprit with a fishing rod. There had been very few times that I had seen Bob leave the helm and come out to join us in the activities, either. Whenever he did, I knew that he was intrigued and had his mind set on something. After a while of the teasing from the mahi, both of us gave up and went inside for lunch; we were pretty tired from the earlier whales.

Ian and Johnny took over the hunt for a mahi. They were smarter about it and they tied the right hook on the rod and used one of the live bait fish that he had just caught. I had just finished my lunch when I heard Johnny yelling something, trying to get anyone's attention inside to come help him. I rushed up to the deck and he was excitedly saying "Fish on! Fish on!" Ian had arrived moments before and came to give Johnny a hand. The mahi put up quite a fight as it zigzagged everywhere, jumping 6ft out of the water at times. Ian tried pulling it in by the line, but when he had it fully out of the water, the line snapped and the fish was gone. All of that work for nothing. But Johnny had a taste and was determined to hook another and bring it fully into the boat. He hooked a few more, but they kept spitting out the fish and line. All of the sudden I saw Johnny with another fish on the line. This time, Rick grabbed the net to help support the weight of the fish. I turned around and the fish was in and Johnny had a huge grin on his face. He had caught us some tasty dinner!

At dinner that night, Ian, our first mate/safety officer, told us how he wanted to practice a man overboard drill this leg. It was important to practice what to do when emergencies occurred so that we would be ready and not panic if something happened. He looked at us and said he had wanted to do one, until he saw the way we looked to find the arrows. Seeing our determination in the way we had looked for hours and hours with no break for an arrow that barely stuck up above the water, was way better than any drill we could have done. If we could find a biopsy, we could find a person. After he said that, we all looked at each other and laughed. He was so right.

This leg we had great teamwork! It was the longest leg, we had the largest number of sperm whale sightings, we had the largest number of sperm whale biopsies, and we had the smallest team. Every person had to pitch in and make up for the one more

person we wished we had. Things got so hot on deck and so busy in the lab that Dr. Wise and I decided to switch with Carolyne and Sandy part way through the 18 whale day and let them get out of the heat, while we got to enjoy a break from sawing tissue to enjoy some whales. It was a win win win win situation. At the end of the leg we had 35 whale biopsies, bringing our total to 50 since we left. We had 66 flasks containing whale tissue and growing cells. We were all set to ship a large part of our total data for the trip, and then the FedEx shipping fiasco occurred. Luckily James was on the case and after a whole day of tracking down the packages, he successfully got them. This was such a relief to everyone on the boat and back in our lab. We would have been devastated to lose them as this was a majority of what we had to show for the voyage. This made us realize just how important each and every sample was; we now knew that we would not rest secured until they had made it to the lab back home and put away safely.