Student

Professor

English 302

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Under the Sea

My fascination with nature started at a very young age, watching caterpillars and letting them crawl over my tiny fingers. Later in school we learned that a caterpillar transforms into a butterfly and the cycle it goes through to make this transformation was nothing short of magical to me. I fell in love with animals and insects, and in particular cicadas. When everyone else was afraid of the buzzing and chirping, I wanted to listen to the insect’s song and to explain it. Chasing, catching, studying, and explaining those cumbersome-looking creatures started my lifelong interest in both science - and people. I loved to search the woods for living creatures, adopting anything injured or sick. I decided that playing peek-a-boo with honeybees pollinating flowers was a good idea, until one of them stung me. After my four-year-old self’s initial shock at how unfriendly and unwilling it was to play, I found out that honeybees die after they sting you. This fact made me sad, that the bee would rather die than play a child’s game. However, it sparked an interest in my mind. How do they die afterwards? Why? So, I asked my parents and they helped me with a quick google search. Apparently when a honeybee stings you, its unable to pull the stinger back out and by leaving it behind it leaves a part of its abdomen, digestive tract, muscles and nerves. This causes an abdominal rupture that leads to its death. That incident opened my eyes to a world of wonders, there were so many animals around us and each one of them had different biological processes. There was so much I didn’t know, so much I needed to know. But the biggest mystery of them all was the ocean.

We moved to Saudi Arabia when I was around seven, there was a tiny local dolphin center, with two dolphins and a seal that preformed a few tricks and could even pull you around in a little boat around the water. This was my favorite place to go, for months every weekend that I chose the family activity, it would be the dolphin center. My love for the ocean continued to develop as I grew up watching *The Crocodile Hunter* and *Bindi the Jungle Girl*. Steve Irwin’s *Ocean’s Deadliest* was the first movie that helped shape my view on marine life. I watched the movie at the age of nine when my parents bought a VHS copy. I watched the movie so many times that in two months, the tape had gotten messed up. It had come lose and gotten stuck in the VHS player. Although I had watched several movies before I watched this particular one. It felt like an alien universe had cracked its door open, just enough for me to immerse myself into it. I came to the realization that it was my biggest passion. However, I didn't consider marine biology as a career until I watched another fascinating show-- "The Blue Planet."

With glorious visuals to spare and educational narration, the "The Blue Planet," delivers life under the sea to people on a silver platter. It gave me a greater love and respect towards the wonders of the oceans as they have never failed to pull me in and drown me in their beauty. It made me develop the mad desire to explore different relationships and survival methods, as well as capturing events that otherwise would never be seen by human eyes.

I decided to return to the United States for my higher education in the field I was most passionate about. My first semester in the United States, I took an English class. I never had the opportunity to write an English essay as they taught very simple English in my public high school in Saudi Arabia, so I was excited to write an essay on a topic of my choosing. My essay was about Nature’s Motherly Fathers; male seahorses. You see in almost every species that engages in sexual reproduction, the female bears the children. However, male seahorses do something exteremly unusual in the animal kingdom; they fertilize eggs, carry and deliver their babies. This trait is unique about seahorses as they are the only fish that experience true male pregnancy. Scientists don’t even have a clear reason why seahorses evolved this way, but theorize this is one of the ways seahorses try to help the species survive. And while I was researching this I learned so much more, one article took me to another and another and soon enough I was six hours into a deep dive down the rabbit hole of marine life videos. I marveled at how the ocean had so much undiscovered life.

I chose a community health major for scholarship purposes, with a minor in ocean and estuarine sciences to pursue my dream. I didn’t think the two fields would overlap, but I was wrong. I took an oceanography course last semester and in it I learned about harmful algal blooms, microbes, and chemical pollutants in the oceans; consumption of seafood; and flooding events which all play a major role in public health. A few articles and videos left me wonderstruck, and those were the ones about the relation of marine life to the medical field and public health. For example; the use of fish skin on burn victims. Tilapia skin has non-infectious microbiota, high amounts of type I collagen, and similar morphological structure to human skin. A patient with burns caused by flames from a gunpowder explosion had Tilapia skin applied to the lesions, leading to complete reepithelialization within 12-17 days of treatment with no observed side effect. Another interesting video explained how horseshoe-crabs were harvested for their mystic blue blood. Their blood contains hemocyanin to carry oxygen through their blood. The copper within hemocyanin causes the blue coloration. Amebocytes makes their blood exquisitely sensitive to toxins from bacteria and are used to detect bacterial endotoxins in medical applications which are crucial to human life.

The vast knowledge we have about life on land is barely a representative of the type of life that exists in the ocean and the ocean begs to be explored. I believe my drive is fueled in a way by the linkage between unraveling the ocean’s secrets and using them towards benefiting the public’s health.