

Up-close and Personal in Evolution's Laboratory- Galapagos Trip by Bekah S. McNeel, Class 322

It's incredible that the representatives of the Holy Roman Empire who first laid eyes on the shores of "las Islas Encantadas" considered them cursed. Still stranger that the British Empire deemed them useless. It was not until a young theology student named Charles Darwin arrived on their shores in 1835 that the value of these tiny, isolated, volcanic islands came to light.

In naturalists' eyes, the Galapagos Islands hold more wealth than all the gold of the Inka Empire.

Our ship, *La Pinta*, left the bay after we visited the interpretation center on San Cristobal, for a briefing on the natural and social history of the island. [All I will say here about the social history: when empires deem a place to be cursed, it becomes a self-fulfilling prophecy.]

We dropped anchor on the far side of the island, at Punta Pitt. Our expedition kicked off early the next morning—5:45am to beat the heat, which was staggering by 10am— with an exploration of the tuff cone formations. Tuff cones are towers of volcanic rock formed when water interferes with magma before it flows downhill. It spews ash everywhere, which piles up and hardens into tuff.

The inhabitants of Punta Pitt were darker varieties of the usual Galapagos fauna. The iguanas were black, the lava lizards were dark. Most of the boobies were red-footed. We trekked up the cone, to their nesting area among the sesuvium. There we spotted baby boobies, which by two months of age are as big as their parents, but still downy white.

One of the most brilliant moves on the part of the Galapagos National Park was to mandate that a certified GNP Naturalist supervise all tourists with a maximum ratio of 1:16. It's a win for everyone, really.

On the way down, our naturalist guide pointed out a *fortis*, the medium-sized ground species of Darwin's finches. For me, it was like a celebrity spotting.

To prepare for the journey, I read *Beak of the Finch*, by Jonathan Weiner, a fabulous book about the work of Peter and Rosemary Grant, who have devoted their professional lives to tracking evolution among the finch population on Daphne Major, an inhospitable outcropping off the coast of Santa Cruz Island.

Naturalists are not blind to the fact that the islands are borderline uninhabitable. Puerto Ayora on Santa Cruz, as well as the towns on San Cristobal and Isabella are sustained almost entirely by tourism, and there's hardly enough fresh water to go around. Some islands, like Española, don't have any fresh water. However, it is exactly this pressure cooker of equatorial weather, isolation, and limited resources needed to create the laboratory for natural selection.

After breakfast, we took a panga (dinghy) out to the Pitt, a formation far enough from the shore for some deep water snorkeling.

The water was warm enough that we did not need wetsuits, and we were more than happy to take the plunge out of the rapidly increasing heat.

I had been in the water for perhaps two minutes when a curious sea lion coasted to a stop within a foot of my nose and stared into my mask, no doubt wondering about this clumsy creature with terrible color adaptation. Just when I began to grow squirmy with the proximity of one of the islands' few carnivores, he dove straight to the reef below and gave an underwater ballet performance.

This would be the routine for the next hour. Sea lions mingling with the eight snorkelers, diving and playing, seemingly ignorant of the fraught relationship of humans and *otariidae* elsewhere in the world. Here, conservation arrived in time. The sea lions are utterly unconcerned. As are the angelfish, Mexican hogfish, and just about every other species.

In the afternoon we moved to Cerro Brujo, a pristine beach along the eastern edge of San Cristobal. On the way in our panga, we saw a natural formation known as "the cathedral." As we passed under the arch, the mineral deposits made it every bit as ornate and baroque as those we had seen on the colonial mainland.

On the beach, baby sea lions and an Oystercatcher family shared the smatterings of rock with vibrant red crabs. The only purpose of the color red in the Galapagos fauna is to attract a mate. To be pretty or handsome. The sexual selection pressures in these tight knit communities render stunning results.

The next morning we awoke offshore on the island of Española. Our early morning departure was not quite early enough to beat the morning sun this time, and while we marveled at the way it illuminated the shallows in the crystal clear water, we knew that our 2.5 km hike would be a sweaty one.

The greeting committee on Española was promising though. Marine iguanas that looked like oxidized copper statues with remnants of red paint flecked across their torsos. Sea lions already napping. And two hawks, the chief predator of the islands, keeping watch.

I think there is something to be said when a smallish bird occupies the top of the food chain. The lack of land mammalia on the islands largely has to do with the peril of getting there. Drifting along on a raft of debris from the Andean mountain streams, only those with minimal needs endure. There are no amphibians, and no endemic land mammals. Only reptiles and insects survived the voyage.

We paused near a "nursery" where sea lion mothers left their pups while they went to hunt. The guide was explaining the fertility cycle of female sea lions when one curious little guy sneaked up behind my husband and nuzzled his leg, probably in search of milk.

We were under strict instructions not to touch animals, even if they touched us, so Lewis submitted to being suckled until the cub moved on.

Vermillion lava lizards, blue-fotted boobies, Nazca boobies, and frigates awaited us on our walk, to distract us from the heat.

During our afternoon snorkel at an outcropping near Gardner Bay a familiar figure materialized like a ghost out of the dark water in the distance. The tell-tale swish of the tail. The serpentine body movement. The fin. A two-meter white-tipped reef shark appeared and disappeared in a matter of seconds.

This would continue for the duration of our snorkel excursion. At one point the patrolling shark passed within about 7 feet of my husband and me. Lewis was thrilled. I would be thrilled later, from the safety of the panga.

We made our way to another beach, so thick with sea lions it was hard to find room to walk. It was feeding time, so the pups were passing from female to female looking for the one that would let them nurse. Sea lions are not communal mothers, and the whole endeavor created a lot of commotion between the begging pups and the indignant mothers.

We plopped down next to a pup who was still napping (the activity that apparently consumes most sea lion hours). I could have reached out to touch him, but the guides were quite serious about that rule. Sitting two feet away from a sleeping baby sea lion and not snatching it up for a quick snuggle required every ounce of self-control I had. (Though the fantasy is no doubt more snuggly than the reality would have been.)

In the morning we began our journey back to the mainland on the island of Santa Cruz. The process involved four transfers, so we made a stop at a local farm, known as a stopping place for the tortoises as they migrate up and down the mountain.

Trekking through the tall weeds on the back acreage of the farm we observed tortoises as they sought relief from the heat under bushes, in mud lollies, and in a pond completely covered in sesuvium.

Throughout our transfers, a giant crate with "Perishable" painted on it traveled alongside us. A team of important-looking naturalists and a camera crew accompanied the crate. We blatantly stared until our own naturalist guide, a native of Puerto Ayora on Santa Cruz Island, said sadly, "Lonesome George is going to the Smithsonian."

She looked as though she had lost a friend.

It is the naturalists who teach us that impulse to look at a place and say, "wow." Before we know the market value of its minerals. Before we know the uses of its flora and fauna. Before we even know if there is fresh water to drink. I think of John Muir in Yosemite, Aldo Leopold in the early Wisconsin mornings, and Charles Darwin on the shores of San Cristobal.