

1: Journeys by fin and flight

August 2, 2008. Whoda thunk?

A dull gray, slithery creature was flopping around in the middle of the road as Marisa and I rushed to the airport to catch my flight to Peru. No, it wasn't a fish that had leaped out of a sportsman's ice chest after a day on the river. This was the walking, air-breathing, non-native catfish, or *Clarias batrachus*, which invaded south Florida in the 1960s.

Though I was born in Florida, this was a first for me. To my knowledge, there was no water within 500 feet of the jay walking cat. What testicular fortitude it must have taken for a fish to risk leaving what little water it had to venture out for a new canal or river. How uncertain was its future once it left, or was it certain of death if it stayed?

I wondered if leading up to its exodus, the catfish got into a heated discussion with its spouse? "Honey, I'm telling you, I've never seen it this dry. If we stay any longer, we're doomed. I say we take the kids out of school this afternoon and leave first thing in the morning for that deep canal down the street."



Walking catfish (*Clarias batrachus*).

"Are you nuts?" she responds. "What about cars, dogs, bobcats, hawks or fire ants? "Have you thought about the dangers? And what are we going to eat on our journey? Count me out!"

I found it ironic that I was embarking on my own journey, one I also saw as necessary if I was to survive, although my survival was more of a mental than physical one. I have always been restless. Sometimes it's a good thing, like at age 29 when I turned down a respectable job in public relations for the Country Music Association, to join a Costa Rican buddy on a 6,000-mile bicycle trip through 17 states, and into Canada and Mexico. At the time, I needed to know what I could and couldn't do. Until then, I was a great starter but a lousy finisher. Of course, there was no job when I returned.

Or when I hitch-hiked to Nashville, convinced that as a songwriter I was going to become the next Kris Kristofferson and write hits for country music super stars. When I discovered that a Shoney's Restaurant dish-washer was more talented than I was, I realized it was the adventure I really wanted, not the career in music.

And now I was off to the deserts of Peru to hunt for prehistoric sharks. Where did that one come from? In moments of honesty (usually while I am downing an ice cold Corona in the evening), I often find my true self, the dreamer. As an avocational fossil collector, I had already found complete or nearly complete skeletons of an ancient dugong, sloth, horse, llama, mammoth and mastodon. I had written several books about fossil sharks and had found thousands of teeth belonging to the largest sharks: megalodons, makos and great whites.

But that's all I had found. Just their teeth and an occasional vertebra. Surely there was some place on Earth where I could look for and possibly find a partial or more complete big shark. I didn't care about keeping it. I just wanted to experience the hunt. I wanted another adventure.

As much as I needed an adventure, I needed purpose. I needed to learn something, to somehow make sense out of the age old "Who am I"? dilemma that some of us humans confront multiple times in our lives. And not just who am I, but who are we? What is our human role relative to sharks? Are we worlds apart or closer than we realize?

We must want some of the same things all life forms want: food, shelter and sex. (Sometimes in the reverse order.)

What of the shark? Can it be or do anything other than what a shark would do? Is it restless beyond its most basic needs? Does it somehow yearn for more than the hunt and bite?

Likewise, can we aspire to be more than mere humans? Do we have built into us a capacity for greatness measured differently than the standards our fellow humans assign us? Are we suppressing our true genius or is this the best we can do? What about the genius to be happy? Or at least comfortable with who and what we are?

The reason I find sharks so fascinating is because they are a misunderstood success story. As a group, their lives have exceeded 400 million years with global distribution. Yes, many branch members have gone by the wayside and are now extinct. But overall, they have learned something I wish my kind could learn as well: The art of balance, of not taking more than we need, of somehow recognizing our habitat and food sources are not limitless. There is much we can learn by observing their behavior.

One particular species I find intriguing is the mako shark. For 50 million years, it has slowly been evolving as our global seas and environments evolve. The changes have been subtle. But it is from the mako that shark researchers have determined the great white evolved. The deserts of Peru are where these changes can be observed; perhaps somewhere between 10 and 3 million years ago. The preservation process at the time those big sharks evolved and died, was perfect.

The plane I boarded would take me from Fort Myers, FL to Atlanta, GA, 500 miles to the north. There I would switch planes, turn around and fly back over Fort Myers, exiting the southern tip of Florida over the Everglades to fly another 3,000 miles, passing over Cuba and Colombia before landing in Lima.

But Lima was just the beginning of my journey. From there, I was to hop on a bus and head south 200 miles to the tiny town of Ocucaje near Ica. Then my guide and I would rent a driver and off-road vehicle for our trek into the desert where surely ancient sharks were waiting.

I thought again of the walking catfish as the plane lifted off, banked left, then slowly gained altitude. Aiding and abetting in the relocation of a foreign national is likely illegal, so I won't say if I cheated by transporting the spiny fish in my peppy mini-Cooper (yes, there was enough storage room), to a deep water canal 1/2 mile away. If I had, perhaps the fish made the following call home afterwards: "Whoa my slimy sweet, you'll never believe where I am and how I got here!"

Once airborne, I was amazed that a 400,000 pound craft of metal alloy and wiring could lift 150 people and 10,000 gallons of fuel 34,000 feet into the air and fly to another part of the world at a blistering 600 miles an hour.

As we climbed, I looked down on the Caloosahatchee River east of Fort Myers in Lee County. "Old Faithful" was a spot I frequented along the river when my brother Dave and I first caught the fossil bug. The U.S. Army Corps. of Engineers had dredged the river three times over the past 100 years, dumping sand, shells and sharks teeth

onto the existing river banks. Large mako shark teeth were among the most beautiful fossils to turn up.

The plane also flew over numerous tributaries of the Caloosahatchee and Peace rivers in Lee, Charlotte and DeSoto counties. Marisa and I operate a fossil guide service on the Peace River, where the public and schools can find and keep their own fossil sharks teeth. Great whites, makos and megalodon teeth are often found while screen-washing or snorkeling in the twisting, narrow waterways. To the west 40 or so miles is Venice Beach, a world-famous dive location for some of the same beasts.

Since I was coming to Peru to find and document fossils, not attempt to keep them, I was loaded down with four still cameras and two camcorders, plus batteries, memory cards and chargers for re-juicing. Not a good idea. Customs in Lima charged me \$95, saying I was only allowed one camera and camcorder to prevent people from coming to Peru to sell such equipment. I could however, recover the cost when I left.

I was surprised that my guide, Mario Urbina-Schmitt, came to pick me up in person. But I shouldn't have been. Peruvian hospitality is an art form. Mario's official title is Collections Manager for Vertebrate Paleontology for the Museum of Natural History in San Marcos. Joining Mario and driving an aging VW van was the owner of the apartment where I would be staying: Hector Miguel Arenas. Hector's great-great grandfather, Antonio Arenas Merino was Peru's prime minister in the 1880s.



Mario Urbina-Schmitt.

"We're aristocrats but poor," Mario joked.

While planning my trip, I had come across Mario's name as co-author of dozens of scientific publications, mostly focusing on whales and dolphins he had collected. Five minutes with the man gave me a clue as to why he may have been serious about being poor. He is more passionate about paleontology and building a world class collections department with his colleague, Rodolfo Salas Gismondi, than making money.

If I had come only to look for sharks, I would be missing out on the opportunity to search for some of the most remarkable fossils found anywhere. A quick tour of the museum featured such creatures as a tropical penguin the

size of a human being, swimming sloths, a 46-ft. long crocodile from the Amazon region of Peru, walrus-dolphins that may have been mollusk-eaters, early archaeocete whales with peg-like teeth that resembled alligator teeth in the front and dog-like carnassials in the back, and shark-toothed whales called squalodons.

Peru's marine mammals

Peru has over 30 species of marine mammals today, including whales, dolphins, porpoises, sea lions, seals and sea otters. What follows are a few on exhibit or in the collections department of the San Marcos museum.



Sperm whale (contemporary, recently beached).

Sperm whale *Physeter macrocephalus* is the toothed whale seen above and in the following five photos. The

bones of a beached contemporary sperm whale were brought to the museum and assembled. Today's adult males can reach 30 feet (9.15 m) to 50 feet (15.24 m), if not larger. Adult weight may reach in excess of 90,000 pounds and the massive mammal can live close to 80 years. Gestation is 503 days and litter size is one. Interval between litters is 1259 days while weight at birth is 2200 pounds. Cachalote, as the sperm whale is sometimes called, is a toothed whale with 18-28 pairs of conical teeth in the lower jaw, ideal for crushing giant squids. It also dines on fish, skates and octopus. The brain is the largest in the animal kingdom, weighing up to 20 pounds.







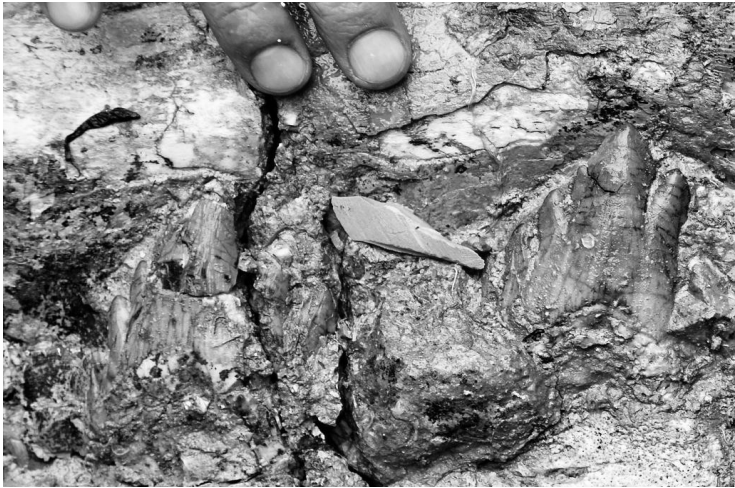
The baleen whale in the photo below (*Balaenoptera edeni*), is a beached contemporary whale that was brought to the museum and assembled. Adult weight is 35,000 pounds with a length of 13 to 15 meters (43 to 50 feet). Recorded lifespan is 72 years. Gestation is 376 days and litter size is 1 per year. While krill is the predominant food source, some baleen whales prefer schooling fish such as pilchards, anchovies, herring and mackerel, as well as lobsters, crabs, bonito, shark, squid, octopus and cuttlefish.



Baleen whale. (Contemporary, recently beached).



Peruvian Archaeocete whale being prepped by Mario.



Teeth of Archaeocete whale.

The archaeocete whale is an ancestor to the modern Mysticeti and Odontoceti whale families. Fossils from these animals reveal whale evolution from land-based to ocean-going mammals.



Primitive toothed whale, species unknown.



Dolphin skull (Pontoporidae). Pisco Formation.
Found by Mario Urbina.



Squalodon model by José Luis Pickling Zolezzi.
An extinct species of whale with shark-like teeth.

Peru's sharks

It's difficult to get an accurate count of how many contemporary or fossil shark species have inhabited Peruvian waters. However, teeth from several larger fossil species are on exhibit at the museum (next few pages), while 22 other fossil species are shown in Chapter 7.



Mako (*Isurus hastalis*). According to the Museum, some of the teeth from this shark are from another mako, inserted for exhibit purposes.





Mako (*Isurus hastalis*), excavated in situ (articulated).



Mako teeth in jaw (*Isurus hastalis*).





Carcharocles megalodon tooth, Pisco Formation.
Found by W. Aguirre.



Carcharocles auriculatus tooth, Paracas Formation.



Whale rib, shark bite marks.