A VISIT WITH IGUANAS OF THE GALAPAGOS ISLANDS

MARY LANG EDWARDS

Rough black bodies sprawled lazily across the basalt lava, absorbing warming rays from the equatorial sun. With arms and legs draped haphazardly across the backs of neighboring companions, there was hardly a vacant spot on the rocks for the lava lizards scurrying among their larger reptilian relatives. Dorsal crests marched characteristically from the head to the tail of the slumbering giants. Muscular arms and legs, bigger around than the oars of the dinghy I had just left behind, emerged from robust bodies with dagger-like claws curving from elongated toes. As I stood admiring for the first time the marine iguanas (*Amblyrhynchus cristatus*) of South Plaza island of the Galapagos, I recalled Charles Darwin's description of these improbable lizards 150 years ago: "It is a hideous-looking creature, of a dirty black color, stupid, and sluggish in its movements." In a strange twist of circumstances, I viewed the same creatures as marvelous animals, engineered in time by environmental forces which have modified their gene pool, a real testimony to the validity of Darwin's treatise on natural selection.

Now, as I approached a colony of iguanas, I learned that they would tolerate my presence to about a meter in distance; any closer and I was startled with a threatening blast of a "sneeze". Apparently, marine iguanas make use of the sneeze, a natural method for expelling excess salt from their nasal salt glands, to warn or intimidate a perceived threat. I learned during the next eight days of exploring the Galapagos Islands that marine iguanas, although appearing to be unaware of their surroundings as they bask, actually remain alert to the slightest movement. A number of times, I attempted to slowly sneak up to a "sleeping" iguana only to have it "sneeze" or edge away as I unobtrusively approached (I thought), even from the rear. Perhaps living in colonies provides added protection from predators; if the intended victim does not see an advancing threat, surely a neighbor lying at even a slightly different angle will.

Land iguanas (*Conolophus subcristatus*) were abundant on South Plaza, basking on lava rocks just behind sandy beaches and even peering out from crevices between rocks further inland. Sometimes surprisingly similar in appearance to marine iguanas, they can be distinguished by a more pointed snout (the face of the marine iguana is more rounded or blunt) and they usually have some yellow on the face or legs. Otherwise, both species are similar in size, with blotched skin hanging in folds and the tail as long as the body. Our guide, Dr. Ettienne de Backer, described three hybrids on South Plaza: two look like marine iguanas but act like land iguanas and one looks like a land iguana but swims and acts like a marine iguana. I do not know whether their hybrid state is speculation or documented. On several occasions I watched land iguanas bite off chunks of cactus without apparent concern for spines. Yellow flowers were often abundant on the various islands and prompted me to wonder whether these iguanas feast upon them.

Colorful, agile larva lizards (*Tropidurus albemarlensis*) scurried around and over marine iguanas as if they were as inanimate as the lava rocks on which they basked. Several times I observed lava lizards on the back or head of an iguana, feeding on insects. Various species live on the islands of the archipelago and differ in color and pattern. Adult females often have blotches of red on the face or neck. The variation from island to island demonstrates the uniqueness of each gene pool and studies show significant differences in the behavior of these lizards. I found these lizards to be as attractive and interesting as any lizards I have ever seen.

The following day, while motoring around the towering cliffs of Espanola Island in a rubber dinghy, we spotted a small dark lava heron perched inconspicuously in a cave-like depression in the rocks. Numerous swallow tail gulls and masked boobies circled overhead or clung to the edge of cliffs far above the surface of the water. Disembarking on the white sandy beach, we were greeted by the low guttoral grunts of sea lions encountered everywhere in the Galapagos. Nearby lay a mass of seven marine iguanas, their mouths drawn in the perpetual smile so characteristic of the species. The dull black color of the males was dramatically enlivened with deep red splotches that gave the appearance of severe sunburns to these lizards. Head bobbing, a characteristic threat display, was readily observed in the larger group of iguanas lying prostrate on the black lava rocks further down the beach. It soon became apparent that marine iguanas usually assume one of two positions. Lying flat on the substrate while basking allows iguanas to maximally absorb heat, and therefore, is most useful when the animals attempt to raise body temperature. The other position, elevated basking, consists of sitting up so that the head and chest do not touch the substrate, or readily absorb its heat. Perhaps this position allows the iguanas to maintain a steady body temperature, or even to cool off.

Moving inland, we found blue footed boobies engaged in their ritual dance: resplendent high-stepping blue feet, wings spread apart, ending with the traditional sky pointing. Male hisses were answered with resounding female honks. So many birds nested on the ground that my constant attention was required to avoid stepping on them. Further inland, we encountered an open expanse that served as an albatross courting ground. As the honking calls of the albatrosses reverberated over the island, I was mesmerized by the scene unfolding before me! Many albatross pairs stood facing each other, beaks clanging in mock sword fights, followed by sky pointing and a preening finale, only to be repeated over and over again.

Marine iguanas are found in large numbers on sandy beaches or lava rocks throughout the Galapagos Islands. When not lazily soaking up heat on land, they can be found in ocean water, heads bobbing in the swells or waves crashing against boulders edging the shoreline. In shallow water, iguanas often graze on green algae which seems so sparse that it is surprising that it meets their dietary needs. Brisk and agile swimmers in deep water, they suddenly appear from the depths below and swim back to land, crawling up steep faces of rocks before nudging their way into the usual mass of basking iguanas. On Santiago Island we were once fascinated by the playful antics of a young sea lion as it grabbed the tail of a marine iguana in its mouth, holding on tightly as the iguana struggled to get to shore. After towing the iguana around in a small lagoon, the sea lion finally released its increasingly frustrated "toy" who then made its way to land.

One of the most interesting observations of marine iguanas was made during our frequent snorkeling expeditions. Concealed from the observer on land are enormous boulders of pillow lava, spewed out from ancient volcanic eruptions and now lying on the ocean floor surrounding many of the islands. These boulders create unique habitats for many sea creatures and provide substrate for green algae. As I swam after leopard rays and green sea turtles or played with sea lions, I sometimes spotted marine iguanas heading out into the ocean to graze or returning to land from a recent meal of green algae. The lumbering iguana on land is transformed into a graceful and competent swimmer in water. At first from the water's surface, I watched them clinging to rocks under water at depths up to 5 or 6 meters as they grazed on the algae covered lava. But then curiosity compelled me to dive down for a closer look. Oblivious to my presence (no more "sneezes"), they continued to eat even when I approached to within a foot. Usually they remained under water for 10 or 15 minutes before surfacing and heading back to land.

The Galapagos Islands are protected by the Galapagos National Park Service (GNPS) which was founded by the Ecuadorean government in 1959. The Charles Darwin Foundation for the Galapagos Isles and the Charles Darwin Research Station located at Puerto Ayora, Academy Bay, Santa Cruz Island were created soon after. These organizations work together to ensure the conservation of the unique ecosystems of the islands and to promote scientific studies, most of which are directed toward conservation. One of the most challenging programs has been to eradicate introduced species which are destructive to native flora and fauna. Another project has been the reintroduction of native species to various islands. These on-going plans to return the islands to their natural state have led to breeding programs for Galapagos tortoises and some subspecies of iguanas at the research station, and to releasing young animals on their original islands. The GNPS provides a rigorous training program for the guides who must accompany all tourists. In addition to escorting tourists from island to island, guides are knowledgeable about island ecology, and oceanography, and are excellent instructors. They must ensure that the islands are protected, and they are trained to report back to the Research Station certain data they observe as they explore the islands. The successes in the conservation of the spectacular ecosystems of the Galapagos Islands is a tribute to the concerted and on-going efforts of these organizations.

Address: Mary Lang Edwards, Biology Dept.
Erskine College, Due West, SC 29639

Letters to the Editor:

The International Iguana Society, Inc.
Finca Cyclura
Rt. 3, Box 328
Big Pine Key, FL 33043

I.I.S. Bookstore

As a service to our membership, a limited number of publications will be distributed through the I.I.S. Bookstore. We believe this will become a valuable source of information. The following publications are now available:

No. 01 **The General Care and Maintenance of the Green Iguana**, by Philippe de Vosjoli. 1990. $4.40 (including postage); $5.50 (non-members).

No. 02 **Guide to the Identification of the Amphibians and Reptiles of the West Indies (Exclusive of Hispaniola)**, by Albert Schwartz and Robert Henderson. 1985. $19.00 (including postage); $27.00 (non-members).