TRAVELOGUE

Four Days and Five Nights in a Herpin' Heaven

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Photographs by the author.

The island of Hispaniola, with Haiti to the west and the Dominican Republic to the east, is the second largest island in the Antilles. Seen from a plane, the boundary between the two countries is clearly evident; it is a border of stark contrasts, of Yin and Yang. Haiti's natural resources have been ravaged — but perhaps ravaged is too polite a word … raped being closer to the mark. Many species have succumbed to extinction and many others are rapidly being swept into the maelstrom that leads them down the same path. Few trees remain in Haiti and those that do, even those in National Parks, are being felled to produce charcoal, the dominant fuel used to cook meals. Haiti appears stark and brown. The Dominican Republic (DR), in comparison, seems like a verdant oasis. However, the DR is far from pristine. Hundreds of years of agriculture and trade with Europe, Africa, and elsewhere in the Western Hemisphere have had their effect upon both flora and fauna. Yet the DR retains most of its original herpetofauna. Hispaniola also has another axis, a biological axis running east and west. Hispaniola was formed by a collision of two old islands. Both islands were on separate evolutionary tracks for a considerable period — long enough to have produced suites of closely related species. When these ancient islands merged, some species were able to move freely through the varied habitats, whereas others were restricted to their ancient homelands by swathes of inhospitable habitat. Biologists often refer to these separate but related entities as the North and South paleoislands.

Having never ventured to the DR, the invitation to attend the IUCN/AmphibianArk Caribbean Amphibian Conservation Needs Assessment workshops set fire to my imagination. I had worked on several islands in the Caribbean but never on an island with more than 20 species of herps. Although the meetings were being held in the middle of the DR's capital, Santo Domingo, previous experiences in the Caribbean assured me that any patch of green was likely to yield a herp species or two that I had never encountered.

I arrived in Chicago ready to endure 12 hours of travel time for the promise of a night of frog hunting in Santo Domingo at the end of it. Unfortunately, an explosion at an American Airlines fuel dump in Miami got between my frogs and me and shut down all American flights into and out of the city. Twenty-eight hours and three airports later, I finally collapsed into a taxi and headed for the Hotel Santo Domingo, the site of the meetings. The heady heat and humidity of the Caribbean (and more than a few of the billboards) fostered visions of an ice-cold "Presidente," the national beer of the DR. Although I don't speak Spanish, I do know a bit of Portuguese, so I was able to hold a somewhat tortured conversation with the driver. As we were driving through the capital, he passed through the red-light district, where he assured me that he knew each of the rather attractive ladies and that they liked Americans. Having been forewarned about tropical diseases (by the nuns in my grade school), I declined the offer. Farther down the road, he pointed to a large, well-guarded building and told me that it was "el palacio del Presidente." I enthusiastically replied that I knew "Presidente" and that it was a "buena cerveza." "No! No! No la cerveza!" he replied. "That is the home of the Presidente." I responded, "Okay, I understand. Es lo cervecero (the brewmaster)." He sighed in frustration and slowly shook his head. I could read his thoughts: Another ugly (and stupid) American…

I hit the hotel lobby at 3:15 in the afternoon. Shortly thereafter, I was in my room, directed to a small refrigerator containing "refreshments." At last I was to meet "el Presidente" for the first but not last time this trip. I hummed "Hail to the Chief" as I rifled through my bags gathering the materials that I had prepared for the meeting that had already begun. A few minutes later, I walked in and was introduced to colleagues who where doing evaluations of the amphibian fauna of Hispaniola. Due to the sheer size of the task, the group had been split into two groups. One was working with the IUCN to evaluate the status of the amphibians for the IUCN Red List and the other was evaluating the conservation needs of each species. I sat quietly, absorbing the methodologies that were being used so that I would be able to contribute when it came time to assess the amphibians of the Lesser Antilles, where I have conducted most of my Caribbean studies. Shortly thereafter, the meeting adjourned, and I learned that a few fieldtrips had been set up as after-hours activities. I was invited to go along that evening to do some nocturnal herping on the grounds of the Parque Zoológico Nacional (ZooDom) — if I wasn't too tired. Although I could have slept,

Calls of eleutherodactylid frogs were curiously absent in Santo Domingo. The most commonly heard anurans in the city were Hispaniolan Laughing Treefrogs (*Osteopilus dominicensis*).

even after several strong Dominican coffees, no stimulant is more powerful than the opportunity to go herping on a "new" island.

ZooDom is a green "island" surrounded by Santo Domingo. In many ways, it reminded me of my workplace, the Milwaukee County Zoo. It was completed in the early 1970s, it is large (125 ha in the middle of a metropolis), and it presents its wildlife in naturalistic settings. It also provides an urban oasis for visitors and wildlife alike. During the daylight hours, children at the Milwaukee County Zoo chase chipmunks; at ZooDom, they chase ameivas. Kids will be kids. But at night, when the Zoo closes, other animals crawl out of their diurnal retreats and take over the grounds. These were the very creatures that we wanted to see.

We arrived shortly before dusk. Night falls heavily in the Caribbean, so we were quickly enveloped by darkness. Having been forewarned about tropical diseases (not just by nuns), I applied insect repellant. In a coincidence befitting the occasion, the first herp that I observed was a female *Osteopilus dominicensis* (Hispaniolan Laughing Treefrog). This frog is, without a doubt, the most commonly encountered anuran on the island, yet not a single one of them escaped being captured by my camera lens. Some people take pictures of their children, I take photos of herps … and spiders … and snails … and centipedes. You get the picture. *Osteopilus dominicensis* shares many of the characteristics of its close relative the Cuban Treefrog (*O. septentrionalis*); it is about the same size, highly tolerant of disturbed habitats, commonly found in urban areas breeding in artificial pools and fountains, and it is a treefrog that doesn't require trees. In short, it is a Cuban Treefrog wannabe. Given the opportunity, *O. dominicensis* could become as problematic as *O. septentrionalis* if it ever slipped its island's bounds.

I had made a list of herps that I was most likely to see, least likely to see, and would sell my first born into bondage to see. Our next two discoveries, predictably, fell into the first category. Anoles are most easily observed and captured at night. Typically, they bleach out and they "pop out" rather than blend into the surroundings that conceal them by day. This is especially true of the anoles that sleep in trees. They also sit very still for photographs — a definite plus. During the day, they flash their characteristic color patterns and display magnificent dewlaps; however, if one were to fill out an 24-hour ethogram, most of their time would be spent "bleached out" firmly gripping their nocturnal resting spot. So, photos taken during the night could be viewed as being more typical of the species — but I digress. The next two species that I added to my "life list" were *Anolis cybotes* (Large-headed Anole) and *A. distichus* (Bark Anole). Anoles have four basic escape methods that they utilize when disturbed: (1) Run up a tree; (2) move to the opposite side of their perch, thus keeping the perch between themselves and their pursuer; (3) immobilization, using cryptic coloration to blend into their surroundings; or (4) hit the ground and run for cover. *Anolis cybotes* is known as a trunk-ground anole. It hits the ground running and, true to form, that's where we caught it. *Anolis cybotes* is a large, aggressive, predatory anole, males attaining 77 mm SVL (Fitch 2003). It makes good use of its powerful jaws, consuming both invertebrates and small vertebrates (smaller anoles) alike. *Anolis distichus* (Hispaniolan Gracile Anole) by contrast is a small anole (SVL 58 mm) that spends much of its day evading *A. cybotes* while foraging on ants and aphids. The Bark Anole uses escape strategy 2 to evade predation by *A. cybotes.* Both of these species are found island-wide, often in association with one another.

Meandering along the ZooDom paths, our guides, Adrell Núñez, Miguel Landestoy, and an armed guard, were repeatedly halted by the flock of photographers getting just one more shot of almost every frog and large spider that we encountered. Suddenly, the word "snake" echoed through the night and, just as suddenly, the harried frogs and spiders where left in peace, possibly blinded by camera flashes, but in peace. Our first snake of the evening was a young adult Hispaniolan Boa, *Epicrates striatus. Epicrates striatus* is semi-arboreal, feeding on lizards as a juvenile, and on rodents and birds as an adult (Sajdak 2003). Both of the Hispaniolan Boas we encountered that night were young animals actively foraging in small trees.

Why the Hispaniolan Gracile Anole (*Anolis distichus*) also is known as the Bark Anole is clearly evident in this image. Both the location and color pattern are ideally suited for foraging on trunks of trees.

The predominant sounds of the ZooDom night were produced by insects, Hispaniolan Laughing Treefrogs, and Bullfrogs (*Lithobates ccatesbeianus*). Bullfrogs were likely introduced to the island as a food source (Powell et al. 1999, 2011). The calls of Bullfrogs emanated from a pond that also contained *Trachemys decorata* (Haitian Slider), a species endemic to Hispaniola and neighboring islands. *Trachemys stejnegeri* (Antillean Slider) also is found on the island, although it has a much wider distribution; it is native to the Bahamas and Puerto Rico, and has been introduced to other Caribbean islands (Powell et al. 2011). The presence of these two turtles makes Hispaniola the only West Indian island on which two native emydid turtles are known to occur (Seidel and Incháustegui 1984). A third slider, *Trachemys scripta*, the Red-eared Slider, also occurs on the island and is displayed at ZooDom. This species is introduced and presents a danger to the genetic integrity of the native species with which it hybridizes. Another introduced species, the Cane Toad (*Rhinella marina*) can also be observed hopping about the zoo grounds. The Bullfrog, Cane Toad, and Red-eared Slider are probably the most widely distributed, purposefully introduced herp species on the planet.

Adrell, Miguel, and, of course, the rifle-toting guard next led us off the paths most traveled and into the surrounding forest in hopes of locating one of the largest species of *Eleutherodactylus* I have ever seen, *Eleutherodactylus inoptatus* (Hispaniolan Giant Frog). Females (the larger of the sexes) attain a snout-vent-length of 88 mm. This was to be my first of many *Eleutherodactylus* encounters. If I did not know better, I would have sworn that this beast was a ranid. The Hispaniolan Giant Frog is widely distributed on the island and it can tolerate disturbed areas if they retain a degree of tree cover (Henderson and Powell 2009.) While a number of us were busy

The Hispaniolan Boa (*Epicrates striatus*) has been called the "world champion stinky snake." We must have been blessed, as the musk of our captured snakes probably only rated a 0.6 on the snake-musk stenchometer.

Having chased diminutive frogs in the genus *Eleutherodactylus* all across the Caribbean, I was hard-pressed to think of the Hispaniolan Giant Frog (*E. inoptatus*) as an *Eleutherodactylus*. It is HUGE (88 mm SVL), looks like a ranid, and barks like a dog (vocalization a low *ba wo-ow*).

Although this picture was staged (see text), this scenario is not unlikely, as *Anolis cybotes* frequently takes to the ground — where Hispaniolan Tropes (*Tropidophis haetianus*) forage for frogs and lizards.

I was unable to get close enough to Hispaniolan Stout Anoles (*Anolis cybotes*) for a close-up — except when they were engaged in behaviors that kept them otherwise occupied.

snapping photos of the *E. inoptatus*, we happened upon a young-of-the-year Hispaniolan Boa sporting its beautiful orange juvenile coloration.

As it was approaching midnight, we made our way back toward the entrance. In a gutter along the road, we came upon our second snake species of the evening, an adult *Tropidophis haitianus* (Hispaniolan Trope). Fifteen minutes of camera light flashes later, someone caught an *A. cybotes* and offered it to the boa. As this diminutive (500 mm SVL) ground-dweller feeds mainly on lizards (Schwartz and Henderson 1991), why not give it a shot? After a brief period of coaxing, it grabbed the lizard and engulfed it as if no one was watching (or photographing). Lesson learned: Never underestimate the power of instinct, or hunger.

An hour later, I was back in my room, once again, greeting the "Presidente." In the past two days, I had been able to catch only three hours of fitful sleep, but I couldn't help but spend another half hour reviewing the "captures" of my camera's lens.

As the meetings were going well and we had had a late night, no sessions were scheduled for the next morning. One group of snakes on both my "most likely to see" and "would sell my first born into bondage to see" lists are in the genus *Uromacer*. Sixto Incháustegui, one of the world's authorities on Hispaniolan herpetology, was attending the meetings and recommended looking for them near the river at the Jardin Botanico Nacional Dr. Rafael M. Moscoso (aka the National Botanical Gardens), located in Santo Domingo a few minutes by taxi from our hotel. So, at 10 am, Richard Gibson of the Chester Zoo in England, Kevin Johnson of the AmphibianArk, and I grabbed a taxi and headed off to the Botanical Gardens for a bit of diurnal herping.

The Jardin Botanico Nacional is huge, more than 200 ha. A former military installation, it was founded in 1976 and dedicated to Dr. Rafael Moscoso, a Dominican botanist who catalogued the flora of the island in 1943. The garden serves as a center for education and recreation

Our rented van was unable to haul us up the rutted roads to the nature trails at Ebano Verde. Here, botanist Joel Timyan investigates the flora along the roadway, while Rafael Joglar and our guides from ZooDom continue the climb. The Mexican Umbrella Fern (*Gleichenia bifida*), which is native to Hispaniola, forms dense stands in disturbed cloud forests, often at the expense of other native plants — as is evident along the roadsides in this photograph.

As the sun set and the temperatures dropped at Ebano Verde, the respiration of the montane forest became tangible as a mist that slowly ascended the mountainsides.

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Although this lizard looks like a skink and acts like a skink, it is actually a Hispaniolan Keeled Galliwasp (*Celestus stenurus*). Ten species of *Celestus* are currently recognized on Hispaniola, but *C. stenurus* is the only species known to occur in Santo Domingo.

with numerous trails and roadways along which to search for herps or view plants, if one is so inclined. Of course, we were there for the herps. Although we did not see a *Uromacer*, we were able to observe and photograph *A. cybotes* and *A. distichus* engaging in diurnal activities. We also encountered a third species of anole, *A. chlorocyanus* (Northern Green Anole). *Anolis chlorocyanus* is a good-sized anole, males reaching 79 mm SVL. They are a trunk-crown species (Rand and Williams 1969) and are highly territorial, with only one male in a tree (Rand 1962).

Richard Gibson was the lizard man on this outing. In a clump of agave, he spotted a *Sphaerodactylus* that unfortunately escaped before I was able to see it. In the same clump of agave, he was able to capture a Hispaniolan Keeled Galliwasp (*Celestus stenurus*). If you have ever tried to capture one of these slippery beasts, you know what an amazing feat this actually was. This diurnally active anguid is found throughout the island, and like all of the *Celestus* species is endemic to the island. By 3 pm, we were sun-baked and ready to return to our air-conditioned hotel to lie down for a few minutes before our evening's excursion to the Reserva Científica de Ébano Verde.

Anoles, such as this Northern Green Anole (*Anolis chlorocyanus*) were abundant in well manicured pockets of trees and shubs in the more formal parts of the Botanic Garden. This species (and *A. cybotes* and *A. distichus*) have established small colonies in Florida, where they were either knowingly or accidentally introduced.

This male Montane Bush Anole (*Anolis etheridgei*) was sleeping on a leaf, from which it would awaken and drop if a nocturnal predator (such as a boa) caused the branch to move.

Male and female Montane Bush Anoles (*Anolis etheridgei*) look very different, even at night. The female is so striking that my headlamp illuminated her 10 m away, yet a half dozen people walked right past without noticing her. While later sharing photos, several members of the party uttered: "How could I have missed that!"

I was able to get only two photos of a Tuck-wheep Frog (*Eleutherodactylus abbotti*) as, unlike most of the frogs that I encountered, this one quickly sought to escape from the light of my headlamp. The common name is quite descriptive of the call of these small frogs.

The Reserva Científica de Ébano Verde was created in 1989 to preserve the endangered native Green Ebony Tree (*ébano verde*). It is a 23-km^2 preserve located in the Cordillera Central in the Province of La Vega. La Loma la Golondrina, the preserve's highest point, reaches to 1,565 m. Ébano Verde is a froggy paradise. It was a long haul to the reserve, so we stopped along the way to refresh ourselves and stock up on local foodstuffs to serve as our evening repast. We reached the reserve shortly before nightfall and hiked up the mountain to enjoy the sunset. We took to the trail as the darkness grew and the frogs began to vocalize. That night I added an anole, the Montane Bush Anole (*A. etheridgei*) and three eleutherids to my tally, the Tuck-wheep Frog (*E. abbotti*), Hispaniolan Montane Frog (*E. montanus*), and the Hispaniolan Wheeping Frog (*E. minutus*). These are high-altitude endemics. The Hispaniolan Wheeping Frog was one of the species on my "least likely to see list" for three reasons: (1) It isn't in Santo Domingo (I never thought that we would be able to get out of the city), (2) it is one of the world's smallest frogs (19 mm SVL), and (3) it is endangered. When we were finally able to track down a vocalizing male, I was ecstatic! I had great concerns that I would be unable to get a decent photo of it while vocalizing. Fortunately, today's cameras are optical wonders, able to make a *montanus* out of a *minutus*. I was able to stand back and zoom in on the frog from a distance. With a little bit of enlargement, I was able to get a reasonably good photo. The night was long, but definitely a highlight of the trip.

The Hispaniolan Wheeping Frog (*Eleutherodactylus minutus*) is one of the world's smallest frogs (19 mm SVL). Like many of its brethren, the volume of its call belies its small size, compelling the listener to look for a much larger source.

On my last night in the DR, I had one last opportunity to see a *Uromacer*. The remnants of the workshop's participants were given the opportunity to return to the Botanic Gardens after nightfall. My hopes were high. While the green coloration of *Uromacer* makes it difficult to see during the day when it is active and foraging, during the night it perches in trees and its white belly seems to shine in the light of a headlamp. Others

From a mountain vantage point, one can easily determine that the Dominican Republic has an extensive agricultural infrastructure.

The most commonly seen of the rare eleutherodactylids at Ebano Verde (at least on this excursion) was *Eleutherodactylus montanus*. It was also the most beautiful.

We encountered a Dominican Giant Anole (*Anolis baleatus*) near the river in a forested area of the Botanic Garden.

on this excursion were Rafael Joglar, Luiz Díaz, Ariel Rodríguez, Alberto Estrada, and Richard Gibson. Most of the species we saw were animals that we had already seen on multiple occasions, O. *dominicensis, A. cybotes,* and *A. distichus*, but we did encounter the Hispaniolan Giant Anole (*A. baleatus*). Male *A. baleatus* may attain a SVL of 180 mm. The first male we found looked emaciated and wasted. Our guide reported that it had been a very dry dry-season. A second male appeared to be in much better shape.

My time was growing short. I was so focused on the trees above me looking for the telltale shining white venter of a *Uromacer* that I literally stepped over a large *E. striatus* that was on a path. I had practically given up hope when Rafael Joglar called out, "Craig, here's your *Uromacer*!" Sure enough, it was the Hispaniolan Shortnosed Vine Snake (*U. catesbyi*). It was fairly high up in a small tree, but after a bit of bank climbing, tree bending, and pole prodding, we had a *Uromacer* in hand. It is perhaps a bit ironic that this widespread Hispaniolan snake would be our prize, as the other two species of *Uromacer* on the island feed exclusively on lizards, whereas half of the diet of *U. catesbyi* is composed of … FROGS!

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