



## TRAVELOGUE

# The Adventure of a Lifetime: Getting Friendly with Costa Rican Herps

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This is the tale of our undergraduate class as we explored Costa Rica during a three-week study-abroad program offered through Texas Tech University (Fig. 1). Our goals were to learn about conservation and to study tropical ecology in a location where many ecological theories were originally developed. For many of us this would be the first time we would be traveling outside of the United States.



**Fig. 1.** Texas Tech University students exploring conservation and ecology in Costa Rica during a study abroad program, 2017. Photograph by K. Griffis-Kyle.

Our flight from Houston, Texas, to San José, the capital of Costa Rica, took a little less than four hours. The city was very different from the arid west-Texas cities with which most of us were familiar; the streets throughout San José bustled with people carrying unopened umbrellas. In staggering humidity along the 8 km between the airport and our hotel we counted over 1,000 motorcycles. We recommend getting out and exploring the market downtown and the national museums. The local people were friendly and the colors and excitement in the markets were well worth the visit as we stocked up on everything we needed for our trip. San José was also the perfect place to start our tour because of its proximity to several of the nation's national parks.

The next morning, we climbed on our bus and headed out to the first of the parks on our itinerary, Irazú Volcano National Park, located in the Cordillera Central near the city of Cartagom. Irazú is the tallest active volcano in Costa Rica (3,432 m asl) and provided us our first exposure to high-elevation tropical cloud forests. As we rose in elevation the pastureland disappeared and the vegetation became denser. We began to see a diversity of ferns and plants like the Sombrillos de Pobre, the Poor Man's Umbrella (*Gunnera insignis*) along the roadside. Irazú had erupted several weeks prior and was still exuding volcanic gasses, so the faint smell of sulfur was in the air. The landscape was beautiful with the stark craters of the volcano juxtaposed against bright green shrubs speckled with pink and purple flowers that drew in the beautiful Volcano Hummingbirds (*Selasphorus flammula*; Fig. 2). Because it was chilly, herps were not active, but we saw plenty of birds including Volcano Juncos (*Junco vulcani*) and Large-footed Finches (*Pezopetes capitalis*). We all felt the park and the introduction to a tropical cloud forest was well worth the winding mountainous road.

The next day, we visited Braulio Carillo National Park, where we were introduced to mid-elevation tropical rainforests. Spanning almost 48,000 ha, it is one of the largest parks in the country, is easily accessed, and is rich in biodiversity.



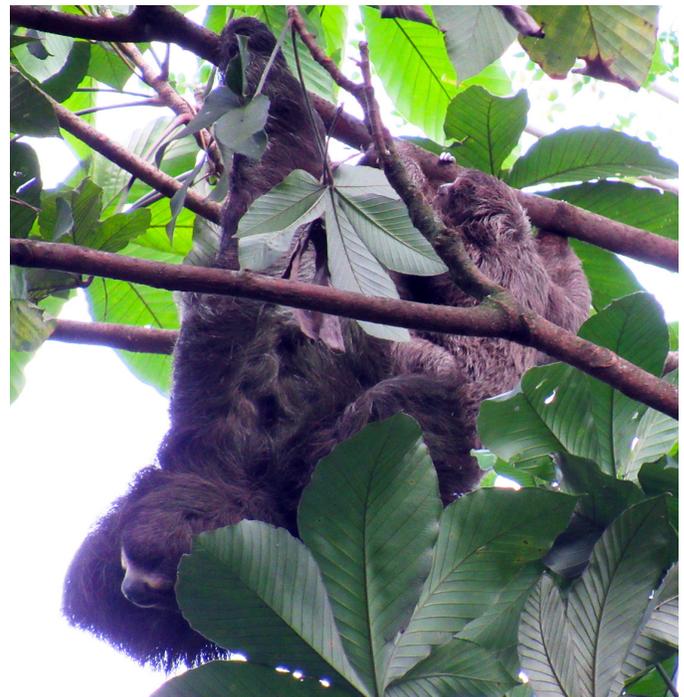
**Fig. 2.** Volcano Irazú was a contrast in stark landscapes (left) and colorful flowers that attracted birds like this female Volcano Hummingbird (right). Photographs by A. Herrera.

We were welcomed to the visitor center by the dense humidity of the rainforest and the pulsing sounds of insects, including bees, wasps, and other colorful creatures that buzzed around our heads. After admiring the beautiful Golden Orb-web Spiders (*Nephila clavipes*) that lined the rafters in the visitors' shelter and soaking ourselves with insect repellent, we entered the rainforest. Our senses were immersed in the new textures, sounds, smells, and sights. We saw leaf cutter ants (*Atta* sp.), army ants (*Eciton* sp.), longwing butterflies (genus *Heliconius* sp.), and Blue Morpho Butterflies (*Morpho peleides*). Beautiful bird songs echoed high above our heads, as did the calls of the distant Howler Monkeys (*Alouatta palliata*). We were lucky and spotted a female Brown-throated Three-toed Sloth (*Bradypus variegatus*) hanging upside-down and carrying her baby (Fig. 3). Our first rainforest visit was a big success.

The next day we packed our gear and moved to the Monteverde Cloud Forest Reserve; a “sky high” community (1,440 m asl) and tourist hot-spot with numerous hotels, restaurants, cafes, and gift shops (the coffee shop Beso Espresso in Monteverde serves an outstanding vanilla latte). Monteverde, which became famous because of the now-extinct Golden Toad (*Incilius periglenes*), is a four-hour drive from San José. We arrived at our new hotel and were welcomed by the beautiful Blue-crowned Motmot (*Momotus coeruliceps*; Fig. 4). We experienced more of the biodiversity that evening during a night hike when we saw numerous large spiders, leaf insects (family Phyllidae), and even a Cusuco, the local name for the Nine-banded Armadillo (*Dasyopus novemcinctus*). We saw a Common Dink Frog (*Diasporus diastema*) hanging out on a leaf along the roadside and found tadpoles in puddles along the edge of the road. The next morning, we explored the Montverde cloud forest canopy on more than two miles of zip-lines (Fig. 4). The zip-lines provided an

excellent way to see the cloud forest canopy and gave a few of our group members the opportunity to overcome their fear of heights. For those of us not into the fast-paced excitement, the area offered canopy walks on suspension bridges, butterfly gardens, and other attractions. The perspective we got from going through and above the canopy reaffirmed our lessons in canopy layers, light penetration, and ecology.

The next morning, we left Monteverde and headed northwest to Liberia, the capital of Costa Rica's Guanacaste Province and our staging point for more national parks. Liberia is central to the province and is dominated by white-



**Fig. 3.** A visit to Braulio Carrillo National Park gave us our first view of a Brown-throated Three-toed Sloth with her baby. Photograph by A. Herrera.

washed buildings, giving it the nickname of “La Ciudad Blanca” or “The White City” — but this city holds more than buildings; we saw many of the ubiquitous Spiny-tailed

Iguanas (*Ctenosaura similis*) hanging out in urban trees. Additionally, the city is home to large flocks of Orange-fronted Parakeets (*Eupsittula canicularis*). During one early



**Fig. 4.** Monteverde introduced us to spectacular wildlife like this Blue-crowned Motmot (left), and gave us the opportunity to explore the cloud forest canopy from zip-lines (right). Photographs by A. Herrera.



**Fig. 5.** We saw Spiny-tailed Iguanas of all ages in Palo Verde National Park. One even joined us for lunch (right). Photographs by A. Herrera (top left), K. Griffis-Kyle (bottom left), and B. Quinones (right).



**Fig. 6.** The wetland at Palo Verde National Park is critically important for bird migration, hosting a suite of wetland birds like this Northern Jacana (inset). Photographs by B. Quinones and A. Herrera (inset).



**Fig. 7.** Olive Ridley Sea Turtles arrive at Playa Ostional in an arribada to lay their eggs. Notice the eggs from nests laid earlier in the night in the background of the left image. These eggs were disturbed when the pictured turtle and other later arrivals dug their own nests. Photographs by K. Griffis-Kyle.



**Fig. 8.** Turtle eggs benefit more than just the turtles. Black Vultures (left) come in the morning to feast on the nests disturbed by turtles digging nests. This area also has a successful and sustainable program for turtle conservation and economic sustainability, allowing limited harvest of turtle eggs (right) in return for protection of the beach and the turtles. Photographs by Griffis-Kyle (left) and A. Herrera (right).

evening, we heard the loud chatter-like calls of hundreds of these parakeets roosting in the trees in front of our hotel. Something disturbed them and they all rose at once, covering the sky in green. The beauty of Costa Rica's wildlife can be found anywhere you go, even in urban Liberia.

The first national park we visited while staying in Liberia was Palo Verde National Park, where we were met by Double-striped Thick-knees (*Burhinus bistriatus*) at the gatehouse. At an elevation of 85 m, Palo Verde is a Ramsar site, a wetland of international importance to migratory birds, and reportedly has the largest concentration of migratory birds and water birds on the Pacific Coast of Central America. This park also has excellent examples of tropical dry forests. While exploring the dry forest, we stopped for a picnic lunch next to an opening on the river and saw more Spiny-tailed Iguanas (*C. similis*; Fig. 5) and the charismatic Green Iguanas (*Iguana iguana*). While eating, we were on the lookout for crocodiles in the river but unfortunately missed them this time. After lunch and on our way to the large wetland, we stopped under the

research station mango trees to wait for part of our group. It was an awesome stop — we found a foam nest of *Leptodactylus* sp. tadpoles in a depression under the trees and unidentified toadlets jumping all over the place in the leaf litter.

Next, we visited the wetland, the crown jewel of the park. The wetland was full of floating Water Hyacinths (*Eichhornia crassipes*), which were far more interesting in native habitat (Fig. 6) than in the United States, where these plants are an invasive species. Nearly neon-green leaves and bright purple flowers stretched farther than the eye could see. Black-bellied Whistling Ducks (*Dendrocygna autumnalis*), Northern Jacana (*Jacana spinosa*; Fig. 6) sounding like squeaky toys, Snowy Egrets (*Egretta thula*), and Purple Gallinules (*Porphyrio martinicus*) were abundant. Palo Verde is worth the time for anyone interested in herping, birding, or simply appreciating biodiversity.

Our next stop, Playa Ostional, provided us with a once-in-a-lifetime adventure. This beach is one of just eight worldwide where the Olive Ridley Sea Turtles (*Lepidochelys oli-*



**Fig. 9.** We stopped at the bridge over the Tarcoles River outside of Carara National Park, where American Crocodiles are attracted by locals who feed them. The resulting congregation of animals supports tourism. Photographs by K. Griffis-Kyle (left) and B. Quinones (right).

*vacea*) congregate. Olive Ridleys engage in arribadas, which are mass nesting events during which many thousands of sea turtles come and lay their eggs over just a few nights (another famous sea turtle nesting beach is at Tortuguero National Park on the Caribbean coast of Costa Rica). This congregation is a reproductive strategy to thwart predators and ensure that some offspring survive. The turtles form a flotilla off the coast of Ostional approximately a week before the new moon, when they will begin nesting on the darkest nights. Thousands of turtles arrive during the dark nights, tightly packing the beach and laboriously digging their nests. The beaches are protected and human visits are highly regulated, but tourists can visit if they contract with a local guide. We headed out with our guide after 2200 h and were careful to follow the rules and made sure to bring head-lamps with red lights (as white lights are not allowed on the beach when the turtles are nesting). The female turtles did not appear to be bothered by our presence, arduously pulling themselves across the sand, digging pits, and laying their ping-pong-ball sized eggs (Fig. 7). We returned in the early morning to watch the last of the turtles slowly return to the water. This is when it became apparent that nests laid early in the arribada were often disturbed by turtles arriving later; this dislodges and flings the eggs with the sand as they dig new nests (Fig. 7). The disturbed nests provide a valuable food source for wildlife like the Black Vulture (*Coragyps atratus*; Fig. 8). These turtle eggs are also economically valuable. By special agreement with the authorities and in return for protecting the beach and the arribada, locals are allowed to sustainably collect and sell the eggs in-country from a limited number of nests laid early in the arribada (Fig. 8). This is a system of conservation where a tightly controlled sustainable harvest of eggs that would not develop anyway can protect a species and support the local economy. Seeing this unique arrangement was both culturally and ecologically enlightening, and one of the highlights of our Costa Rican visit.

Our next stop was on the edge of Carara National Park, outside the tourist town of Jaco. Nearby, the Tarcoles River flows to the Pacific Ocean and the bridge crossing the river provided an opportunity to watch many American Crocodiles (*Crocodylus acutus*) — more than any of us ever thought to see in one place at one time (Fig. 9). After leaving the crocodiles, we went to our hotel, the Cerro Lodge, where bird feeders attracted Red-legged Honeycreepers (*Cyanerpes cyaneus*), Blue-grey Tanagers (*Thraupis episcopus*), Blue Dacnis (*Dacnis cayana*), Baird's Trogons (*Trogon bairdii*), Turquoise-browed Motmots (*Eumomota superciliosa*), Hoffman's Woodpeckers (*Melanerpes hoffmannii*), and the abrasively vocal Scarlet Macaws (*Ara macao*; Fig. 10). Then we started finding herps; the first was a black-headed snake (*Tantilla* sp.) burrowing through the dirt next to the pavilion (Fig. 11). We also found Red-eyed Treefrogs (*Agalychnis callidryas*), Veined Treefrogs

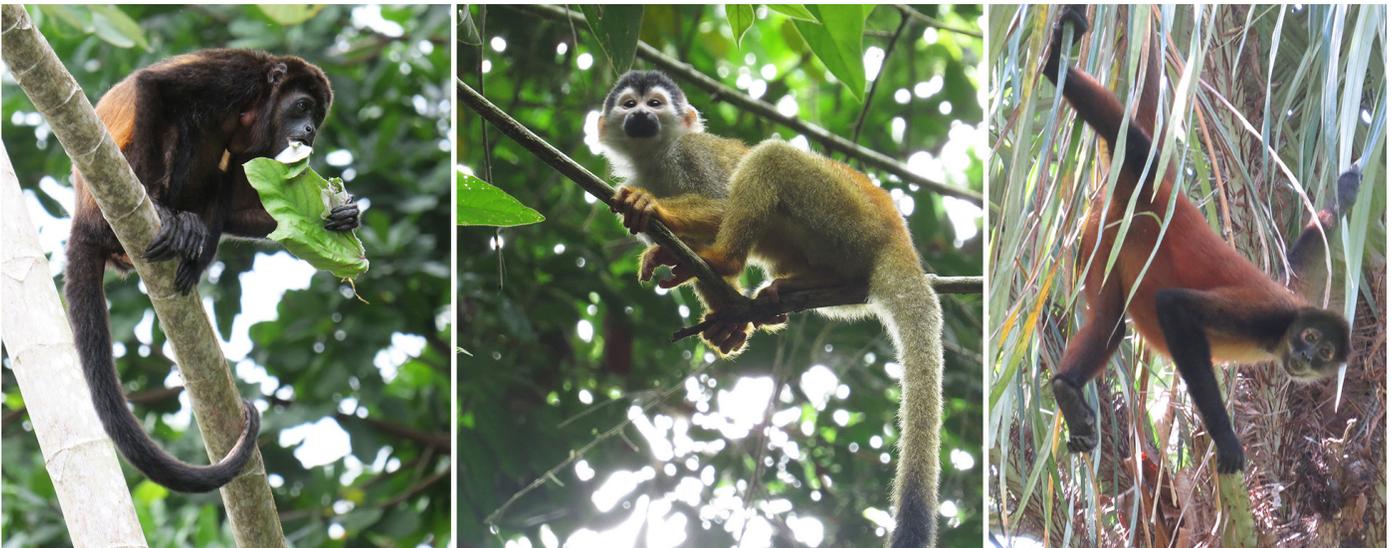


**Fig. 10.** An incredible diversity of birds included Scarlet Macaws (top), Blue Dacnis (middle), Baird's Trogons (bottom left), and Turquoise-browed Motmots (bottom right) at Cerro Lodge, located on the edge of the Carara National Park. Photographs by A. Herrera.

(*Trachycephalus typhonius*), and a tiny Sheep Frog (*Hypopachus variolosus*) on the grounds (Fig. 11). We took a walk along the dirt road by the hotel and down the hill passing Geoffrey's Spider Monkeys (*Ateles geoffroyi*), Yellow-headed Caracaras (*Milvago chimachima*), hunting Roadside Hawks (*Rupornis magnirostris*), and more. We even saw a venomous Brazilian Wandering Spider (*Phoneutria* sp.) protecting her egg sac. For a one-night stop, Cerro Lodge was very comfortable and a great place to see and hear wildlife.



**Fig. 11.** We saw our first black-headed snake (left), a Red-eyed Treefrog and a Sheep Frog (middle), and a Veined Treefrog (right) at Cerro Lodge outside of Carara National Park. Photographs by B. Quinones (left) and A. Herrera (middle and right).



**Fig. 12.** Primates, like the Howler Monkey (left), Squirrel Monkey (middle), and Geoffrey's Spider Monkey (right), were seen in many of the national parks. Photographs by A. Vega.

We left Cerro Lodge and the crocodiles and headed south to Sierpe and into the rain, where we staged for the next part of the trip. The community of Sierpe was our gateway to Corcovado National Park on the Osa Peninsula. This park spans nearly 43,000 ha and includes some of the last remaining old growth rainforests on the Pacific Coast. We boarded a boat just large enough to carry us and our belongings around the peninsula into an area so remote that it lacks

roads. The only other ways to get there are by a small propeller plane or by hiking 16 hours through the rainforest. Unloading at the Sirena Station two hours later was an experience. Because no dock was present and the boats cannot beach on the hard volcanic bottom as the sand formed only a thin ribbon at water's edge, we all jumped into the knee-to thigh-deep water and passed our backpacks up to the beach, only dunking one as we fumbled with our bags in the surf.

A massive wall of trees provided an abrupt transition from sand to rainforest with magnificent buttresses, strangler figs, and an incredible array of fungi. Once unloaded, we hiked into the forest sloshing through puddles to get to the Sirena

Ranger Station. At the Station we were led to our mosquito-netted bunk beds on a raised platform, where we had a roof over our heads but no walls, so the platform was open to the slightly cooler night breezes.



**Fig. 13.** Charismatic mammals were easy to see in Corcovado National Park; these included Baird's tapir (top left), the Tayra (top right), troops of White-nosed Coati (bottom left), and the White-lipped Peccary (bottom right). Photographs by K. Griffis-Kyle (top left), A. Perez (top right), A. Herrera (bottom left), and A. Vega (bottom right).



**Fig. 14.** We found our literal snake-in-the-grass ... and leaves while visiting the Sirena Ranger Station in Corcovado National Forest; this beautiful Boa Constrictor was resting in the low vegetation along the edge of the airstrip (left) and the venomous Terciopelo blended in with the leaf litter (right). Photographs by A. Herrera (left) and C. Perez (right).

This is a true rainforest, and it certainly rained. In fact, don't ever expect to get dry while you are there. When it was raining, the cooks, park guards, and some of our classmates played fútbol on the airstrip. When we had a moment to relax, we would pull up the chairs on the wrap-around balcony observing the activity in a nearby Cecropia tree (*Cecropia* sp.). One day we recorded three Central American Squirrel Monkeys (*Saimiri oerstedii*; Fig. 12), a Geoffroy's Spider Monkey (*Ateles geoffroyi*), two Yellow-throated Toucans (*Ramphastos ambiguus* of the black-mandibled variety), and a Crested Guan (*Penelope purpurascens*) on a single tree at the same time. On the balcony, we would be joined by a resident male Yellow-headed Gecko (*Gonatodes albogularis*) that hung out at the station. We always had good views of the avifauna from the station, where we saw over thirty species of passerines, including the Turquoise Cotinga (*Cotinga ridgwayi*), while reclining on the porch. Walking around the station and on the adjacent airstrip, we encountered White-headed Capuchins (*Cebus capucinus*) cackling in the brush, squirrel monkeys throwing sticks at us (and once trying to urinate on us), and Mantled Howlers (*Alouatta palliata*) roaring in the distance (Fig. 12). The howlers start roaring around 0430 h, providing a truly "alarming" wakeup

call. You can see a lot at Sirena without venturing far, but even more if you hike the trails. For example, while out on hikes we would often see a herd of White-lipped Peccaries (*Tayassu pecari*) skirting the edge of the openings along the airstrip; a troop of White-nosed Coati (*Nasua narica*), locally called Pizotes, down along the beach or snuffling through leaf litter in search of food; or a Baird's Tapir (*Tapirus bairdii*) foraging near the beach (Fig. 13). A Northern Tamandua (*Tamandua mexicana*) may waddle out of the underbrush and climb up a tree or a Tayra (*Eira barbara*; Fig. 13) may scamper across an opening causing you to question what you just saw.

We observed so many fantastic herps in the Corcovado National Park. While exploring the area we found a beautiful Boa Constrictor (*Boa constrictor*) and under the forest canopy in the leaf litter we saw a Terciopelo (*Bothrops asper*; Fig. 14), and a magnificent Caninana (*Spilotes pullatus*). While investigating the wetlands we saw that the Red-eyed Treefrog (*Agalychnis callidryas*) and the Gliding Treefrog (*A. spurrelli*) had been breeding after the rains and had oviposited egg masses on the vegetation (Fig. 15). Evidence of snake predation on these egg masses was likely by Banded Cat-eyed Snakes (*Leptodeira septentrionalis*), Plain Treesnakes



**Fig. 15.** Two species of *Agalychnis*, the Red-eyed Treefrog (top images) and the Gliding Treefrog (bottom images), were breeding in the same wetland during our visit. Photographs by A. Vega (top and bottom left), C. Perez (top right), and K. Griffis-Kyle (bottom right).

(*Imantodes inornatus*), Tropical Flatsnakes (*Siphlophis compressus*), and/or Lora Snakes (*Leptophis abetulla*). These wetlands also were home to the Spectacled Caiman (*Caiman crocodilus*). The large American Crocodile (*Crocodylus acutus*)

is generally only in the larger rivers or at the mouths of rivers, such as where we saw them. One has to be careful not to enter the water carelessly at these river mouths as crocodiles and sharks, both large enough to be dangerous to humans, feed



**Fig. 16.** We saw many species of lizards, including the Four-lined Ameiva (top left), Common Basilisk (top right), Many-scaled Anole (bottom left), and Green Iguana (juvenile bottom right). Photographs by A. Herrera.



**Fig. 17.** The Bolivian White-lipped Frog (left), Rosenberg's Gladiator Frog (center), and the Cane Toad (right) were just a few of the many amphibian species we saw during our time on the Osa Peninsula in Corcovado National Park. Photographs by A. Herrera (left), B. Quinones (middle), and K. Griffis-Kyle (right).

when the tide is right. Lizards also were plentiful. We startled Common Basilisks (*Basiliscus basiliscus*; Fig. 16) into bipedal-

ing on the water along stream edges and saw Green Iguanas (*Iguana iguana*), a Many-scaled Anole (*Anolis polylepis*), a



**Fig. 18.** An unknown snake that none of us were willing to yank out of the cavity (left) was later identified as a Bird-eating Treesnake; we saw it on our way to the boats to leave Corcovado National Park. Close to 1.5 m of the snake are hanging outside of the tree cavity. Photographs by C. Perez (left) and A. Vega (right).



**Fig. 19.** Stopping on the Cerro de la Muerte, we were surprised at how chilly we were in this subalpine biome. We nevertheless saw both male and female Green Spiny Lizards. Photographs by K. Griffis-Kyle (left) and A. Herrera (top and bottom right).



**Fig. 20.** A diversity of hummingbirds gave us a show while we ate lunch at La Georgina Restaurant; this Violet-headed Hummingbird watched us eat. Photograph by B. Quinones.

Big-headed Anole (*Anoles capito*), and Four-lined Ameivas (*Ameiva quadrilineata*; Fig. 16). The amphibians were abundant as well; in addition to the two previously mentioned species of *Agalychnis*, we saw an incredibly cute Rosenberg's Gladiator Treefrog (*Hypsiboas rosenbergi*), Bolivian White-lipped Frogs (*Leptodactylus bolivianus*), and the nocturnally active Cane Toad (*Rhinella marina*; Fig. 17). While hiking to the boat to leave the park, we saw a large unknown snake half in a tree cavity along the trail (Fig. 18), but no one was willing to pull it out for identification. We determined later that it was a Bird-eating Tree Snake (*Pseustes poecilocheilus*).

As all good things must end, the time came for us to leave Corcovado. We headed north to San José, toward an experience none of us expected in the tropics. We stopped in a somewhat chilly subalpine biome on the Cerro de la Muerte ("Mountain of Death"), where we hiked to the 3,451-m summit, enjoying the subtle beauty of mosses, lichens, cold-adapted vegetation, and scurrying Green Spiny Lizards (*Sceloporus malachiticus*; Fig. 19). The cool air and saturated humidity cause mist to form all around, giving the place an other-worldly feeling. After exploring, we left the chilly mountaintop and stopped nearby at La Georgina Restaurant, which is famous for its local cuisine and hummingbirds, several species and many individuals of which battle for territory at the feeders right in front of your face (Fig. 20). The restaurant sells locally made sweets and the group had fun sharing candy the rest of the way back to the capital city.



**Fig. 21.** Several places in Sarchí provide information about ox carts, which are an important part of Costa Rican artistic and economic history, having provided a reliable way to harvest coffee from the steep topography of this volcanic country. Photographs by K. Griffis-Kyle.

Once back in San José, we did more sight-seeing, visiting more of the outstanding museums and shops. The Jade Museum, filled with pre-Columbian art, was a favorite and offered an incredibly good latte in the gift shop. We also took a trip to Sarchí, where we learned about Costa Rican history and wood-working culture. An iconic symbol of Costa Rica, the traditionally painted ox carts feature bright colors and intricate designs and are still traditionally manufactured here (Fig. 21). We picked up some great souvenirs at Fabrica de Carretas Eloy Alfaro, a cart-making group where artisans create traditional wood arts and offer tours. These detailed carts and intricate wood carvings are a national symbol of Costa Rica and not only play an important role in big celebrations

but still are sometimes used in more rural parts of the country. Should anyone be seeking insights into the culture of Costa Rica, Sarchí is worth the inclusion in their itinerary.

This is where our story ends. As we flew back to the U.S., we were thankful for the time we spent and reflected on how our travels in Costa Rica had changed us. This country is incredible in its ecological diversity and provided us important lessons in conservation. The nation's dedication to conserving natural resources provides an example of conservation that other countries should emulate. Whether you are seeking the thrill of ecological discovery, the peace of natural beauty, or the joy of cultural exploration, Costa Rica is an extraordinary place to visit.