



The Agouti of the Commonwealth of Dominica,
Dasyprocta leporina

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Abstract

The Red-rumped Agouti, *Dasyprocta leporina*, is one of the few mammals located on the Island of Dominica and is a known seed disperser. Matthew and Christine Luke allowed me to come to their residence to film the agoutis that they feed regularly and learn information about their behavior. Five agoutis were observed on four different days and their behavior was documented on film while eating the foods provided. An interview was also done to learn about the migration of agoutis from the Lukes yard from the month of March to the middle of May. They are a traditional meat source for Dominicans and the native Kalinago tribe, therefore, hunting is allowed for about three months of the year but little is known about the numbers of agoutis hunted each season or how many are on the island itself.

Introduction

Dominica in the Lesser-Antilles is a tropical island made up of primarily rainforest with a high of 68.8 inches (Canefield Airport) to 101.2 inches (Melville Hall) of rainfall per year and the rain levels in the mountainous rainforests are usually considerably more than that (weather.gov.dm). The temperatures range from 16.9 degrees to 35.4 degrees Celsius (weather.gov.dm). The agouti of the small island of Dominica, *Dasyprocta leporina*, is a mysterious creature because they are shy and move quietly so they are easily missed by the untrained eye. They are about the size of a small- medium sized cat with dark brown fur that has golden flecks throughout their smooth, unidirectional coat. They have squirrel-like heads with large, round pink ears, short, thin legs, and a robust round body with a tail that is little more than an inch. They live on the sides of mountains in covered areas, on steep slopes, and along streams (Luke and Luke). *Dasyprocta* are generally known for their help in seed dispersal since in the wild they have a diet of mainly seed and pulp from fruit and have also been known to eat insects (Silvius and Fragoso, 2003). There is little documentation written on the behavior of Dominican agoutis in circulation so I decided that since I was coming to the island, I would attempt to document as many

behaviors of the agoutis as possible. It was decided that going to Matthew and Christine Luke's home was the best option for researching the agoutis since they feed them on a daily basis in various locations around their house in the montane rainforest. The food fed to the agoutis by the Lukes is a different diet than in the wild sometimes consisting of banana pancakes and roasted breadnuts , but they also feed them their regular diet of plantains, bananas, and raw breadnut.

Materials, Methods and Documentation

I used both a Sony Full HD1080 Cyber-shot digital camera and Sony video camera for observations. On the first day observation, May 30, 2012, I arrived at the Luke's house around 11:00 A.M. I set up my video camera on the outside porch of in front of the house. Two leaves that were about one foot long and six inches wide were set out with about three cups of a mixture of mostly dry coconut purée placed on top of them. One was placed on top of a stack of wood planks that was arranged in steps for the agouti to climb. The other coconut leaf pad was placed on the lowest plank of wood about 8 inches off the ground, closest to the house so it would be easier to view the agoutis while they ate. Plantains that were cut in half were tossed out into the open space of the front and side yard and there were also remnants of old food left in the yard. At 11:11 AM the first agouti arrived in the side yard of the house. The second agouti for the day appeared around 12:00 P.M. in the front yard of the Luke's residence.

The second day of observations was started on June 1, 2012 around 11:30 A.M. I set up my camera in the same place on the front porch as the first day of observation. Various foods of 1 ½ inch sections of plantain, softened, roasted breadnut, wheat bread, coconut pieces about a square inch in size and coconut mash were scattered around the yard sparingly with the coconut mash placed in the center of the bottom plank of wood that was about 8 inches above the ground. Most filming was done with the video camera set for close up shots.

On the third day of observations, starting on June 4, 2012 I did not throw any food out besides a small piece of cooked plantain. However, I got set in the same area as observation days one and two.

Lastly, on the fourth and final day of observation, July 6, 2012, Christine Luke made banana pancakes for me to toss into the yard for the agoutis. I positioned myself on the front porch and filmed the agouti with my digital camera.

On all days of documenting the agouti, both Christine and Matthew Luke called out “Bassie” which is their name for the agouti and is how they call the agouti to their home. I would also trek through the rainforest to try and catch the agouti in another light when they are not aware of my presence.

Results and Discussion

There were three opportunities to capture agoutis on the first day of observation. There was one occurrence of one agouti and two occurrences of a second. The first agouti was found on the side of the house where the open space is not as large as in the front yard. It was difficult to see the sex of the first agouti since their hind end is so close to the ground and is usually covered by grass and other small plants. It hid in the tall leaves for a few seconds watching me and my movements and then slowly emerged in short strides into the open area where the plantain and other old food remains were. Then it went back into the tall leaves to eat. After it finished eating, I filmed the agouti as it paused and looked in my direction again for another extended period of time. The second agouti which I filmed twice was a female. I captured her eating plantains and the coconut mash that was located about three feet in front of the right side of the house and also the coconut located on the planks of wood in the open yard. She browsed for another couple minutes then went back into the brush. They ate while sitting on their hind limbs, holding food with their front paws in a crouched stance (FIGURE 1). The agouti would eat like this about 90% of the time.



FIGURE 1: Agouti eating in crouched position

The second agouti did something which was completely absent in the other videos. It ate with its head down. In all of the other footage I saw from day one, the agoutis mostly always ate with their head up and looking around whether they were on their hind limbs or not.

On the second day of observations I ended up with thirteen different short videos of the agouti. Again there were two agoutis documented during the five hours I was there. The behavior was generally the same as the first day except that when the second agouti stood up to eat I could see her teats which were not swollen or lactating to point where I could see. I was able to see that agoutis have different amounts of toes on their front and hind feet. They have three toes on their hind feet and five toes on their front feet and have a digitigrade stance (FIGURES 2 AND 3).



FIGURE 2 and 3: Hind feet (left), front feet (right)

When the agouti ate the plantain they would peel off the outer rind with their teeth in a single motion to peel it. They also did this with the breadnut. On this day there were also many occurrences of them burying food with two of the times documented on film. They would bury food like coconut and breadnut but eat the plantain and bread on the spot. I am not sure as to why they decide to bury the coconut since they also eat coconut onsite except that coconut possibly stays fresher longer than the softer foods and will last for future days underneath the soil. As for the breadnut, Christine Luke said that they bury breadnuts until they are softer and easier to eat. There was one incident where the agouti had to jump over a small ditch in the yard. They jump in one swift motion like rabbits while keeping their limbs close together until they land.

Due to a miscommunication, there were no agoutis to be documented on the third day of observation because the Lukes fed the agoutis pancakes in the morning before I came.

The fourth day of observation was partly disrupted by heavy rain pouring on and off for about an hour and a half, however, I did document one agouti. This agouti seemed young yet very trusting of humans since it got within two feet of the house while we threw it pancake pieces. It also would grab its food and climb to the top of the wood planks to eat instead of staying on the ground or sitting partially under the cover of the top plank which most of the other agouti did.

Another behavior that Christine and Matthew Luke described was that they do a “dance” to make a definite path by stomping their hind feet to flattened the grass (Luke and Luke). There were atleast 5 trails of compacted vegetation where it seemed the agoutis would go when they disappeared into the brush and as Kayla Sagebiel noted in her paper it looked like there were definitely paths they traveled on to and from the open areas in the yard (Sagebiel, 2006). They also built dens for shelter under tree roots, depressions in the mountain slopes and seemingly anything else that could act as a shelter. All the agoutis documented would only put their heads down to smell for food for about 1-2 seconds then quickly picked their heads back up to look out beyond them. They also never took more than 7 steps before pausing unless they were scampering back into the covered areas. When the agouti were in the brush it was significantly harder to see them since their gold flecks do not show well and are dark brown and camouflage with the understory of the forest. Agoutis are considered diurnal and have excellent eye sight. Their eyes express both the L-opsin and S-opsin which are the proteins that express the colors red and green, respectively (Allan de Farias Rocha, Ahnelt, et al, 2008). Their eyesight along with hearing ability may be the key to them not being able to be seen easily in nature. All of the agouti but one would come into and out of the brush to eat food and take some back repeatedly. They would do this for about an hour then not come back for the duration of my observation time. The number of agoutis present was significantly less this year according to what both the Lukes said and Kayla said in previous years. This may be due to the big flood that happened late last year in 2011. However this is just a hypothesis since I do not know how well agouti are at avoiding these types of disasters.

Migration and Hunting

Talking with Mrs. Luke I learned that every year the agoutis leave from around her home for about 6-8 weeks and return at the beginning of the wet season around May (Luke and Luke). The thought is they go to another part of an island or their dens to give birth and consume food for

pregnancy. This is because when the agoutis come back they either have young or are pregnant, so it is also thought that only the females disappear from the residence. This is the only time they are absent (Luke and Luke).

Every year the hunting season on Dominica opens from October 1 to December 31 (www.dominica.gov). It is a tradition for the island to hunt agouti since they were brought here to be hunted by the Kalinago peoples who still avidly hunt them to date (Taylor, 2010). I have read that agoutis are hunted in large numbers in the country of Brazil each year so I wondered what the numbers were on Dominica for a comparison analysis. When I tried to contact the Director of Forestry by email I failed a few times due to technological problems and failed by telephone. I received another email address and was told to contact the Director of Forestry and Wildlife, Mr. Burton, but was emailed back by Ronald Charles. He stated that they did not have any information about the approximate number of agouti on the island nor how many are hunted during a season due to lack of regulation and short staff (Charles, 2012). Never the less, agoutis are protected by the government which regulates hunting and so they can only be hunted during the permitted season (Taylor, 2010).

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