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FURTHER INFORMATION ON NEOTROPICAL MONKEYS IN THE XVI CENTURY: PART 3

Bernardo Urbani

Here, I report on further descriptions and mentions of Neotropical monkeys when Europe first began its colonization of the New World. In 1498, Christopher Columbus (hereafter referred to as C. Colón) landed on the island of Trinidad, four days before stepping foot on continental America in Paria, Venezuela. Hernando Colón (1488–1539), son of the admiral of Genoa, wrote a chronicle about the travels of his father, including the day he first visited Trinidad. H. Colón indicated in his posthumous work (1571) that “in the point named Galea [currently known as Galeota Point, southeastern Trinidad]... They found many animal footprints that looked like goats, and also bones from one, but, since the head did not have horns, they believed it was a *gato paúl*, or monkey, later they knew that it was, since they saw many *gatos paúles* in Paria. That same day, August first [1498], sailing between Cape Galea and Cape Playa, to starboard, to the South, we saw *Tierra Firme*...” (H. Colón 1932: 132). As in the report of C. Colón about primates in Paria (Colón 1996, Urbani 1999), this mention not only refers to the first observation of remains alleged to be a monkey on the island of Trinidad (probably *Cebus albifrons trinitatis* or *Alouatta macconelli*), but also remarks on monkeys on the continent (*A. arctoidea* or *C. olivaceus*) seen by C. Colón a few days later in northeastern Venezuela.

Regarding the first report about monkeys on *terra firma* written by C. Colón in 1498 (Colón 1996, Urbani 1999), Pedro Martir de Anglería (1457–1526) added further information in 1500 indicating that “Another very singular thing the Admiral [C. Colón] has told me, and which is confirmed by his companions (all worthy of credence and whom I carefully questioned concerning the details of the voyage), is that he sailed twenty-six leagues, that is to say, one hundred and forty-eight miles, in fresh water; and the farther he advanced to the west, the fresher the water

became. Finally, he saw a very lofty mountain, of which the eastern part was inhabited only by a multitude of monkeys with very long tails. All this side of the mountain is very steep, which explains why no people live there... It was learned by signs that that country was called Paria, that it was very extensive..." (Anglería 1912: 75). P. M. de Anglería also indicated that in the regions of Curiana and Cauchieta, in today's Venezuela where the Peninsula of Paria is located, "The Spaniards brought away some very pretty monkeys and a number of parrots of varied colors, from that country" (Anglería 1912: 85). This seems to be the first report of primate trafficking from the Neotropics. The monkeys were probably wedge-capped capuchins (*C. olivaceus*) or howler monkeys (*A. arctoidea*).

In 1504, Angelo Trevisan, assistant to the Venetian ambassador to the Spanish Crown, provided information on the primates encountered in continental America (Vannini de Gerulewicz 1989). He narrated part of the story of Pedro Alonso-Niño (1569–1502), who in 1499 directed an expedition to the region of Paria. Trevisan (1989: 151) wrote that "Entering the island [refers to *terra firme* = Paria], they saw forests with the tallest dense trees, from where voices of animals filled the country with strange howls. But they saw that there were no dangerous animals, because the local inhabitants of those forests walked quietly, without fear, with their bows and spears." Considering the particular tendency of reporting primates in the earliest XV century chronicles (Urbani 1999, this study), it is quite probable that the above mentioned animals with their particular vocalization were almost certainly howler monkeys (*A. arctoidea*).

Few illustrations have been found that show primates from Brazil during the XVIth century. In 1557, the German traveler Hans Staden (1525–1579) provided an illustration of a primate together with Amerindians and a European (Fig. 1). In 1558, the French traveler and cleric André de Thevet (1502–1590) published his *Les singularitez de la France Antarctique*. This book has illustrations of three primates with humans (Fig. 2). Thevet visited the region of Rio de Janeiro, and it seems he was recording how Tupi Amerindians interacted with monkeys (see also Urbani 1999). In 1585, Jean de Léry's *Histoire d'un voyage fait en la terre du Bresil...* published not only descriptions of primates from the Brazilian coast but also an illustration. De Léry (1536–1613), a French explorer, visited the land of the Tupi in eastern Brazil. In this book, he presented an illustration of Tupinamba Amerindians with a monkey (Fig. 3). In 1592, the publisher Theodore de Bry (1527–1598) printed a scene in the Brazilian coast of an indigenous community with Europeans and mythological entities, where a monkey was included (Fig. 3). These primates seem to be similar in term of the style with those illustrated Old World primates represented in the incunable books produced during the first century of printing (B. Urbani, unpublished).

By 1558, the renowned Swiss naturalist Konrad Gessner (1516–1565) already published his *Historia animalium*.

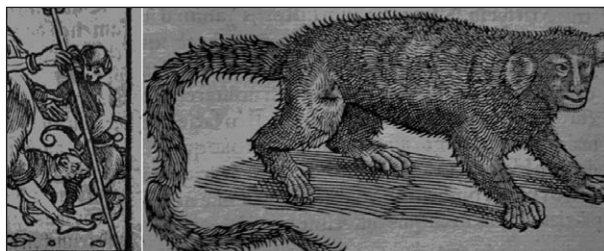


Figure 1. The monkey of Hans Staden (1557, left), and the "sagoín" of C. Gessner (1558, right).



Figure 2. The monkeys of André de Thevet's *Les singularitez de la France Antarctique*.



Figure 3. The monkey of the Tupinamba in Jean de Léry (1585)'s chronicle (left), and Theodore de Bry (1592, right).

This work included a review of the primates known in Europe by the first half of the XVIth century. In 1560, Gessner published his *Icones animalium* where the pre-Linnaean zoologist published what seems to be the first scientific representation of a Neotropical monkey. The author showed different Old World monkeys such as a baboon and a macaque, primates from the Medieval imaginary, as well as the sagoín as an illustrated primate from the Americas (Fig. 1). A brief profile of this monkey, a marmoset (*Callithrix* sp.), is also presented. He noticed morpho-behavioral characteristics such as its small size, and its agile and elusive nature. Gessner used the term *Galeopithecum* for referring to this primate.

Acknowledgments

Thanks to the Rare Book and Manuscript Library of the University of Illinois at Urbana-Champaign and its personnel for their great support while visiting it on numerous occasions as well as the Library of Congress. The author would appreciate any comments and references for future updates.

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POPULATION DENSITY OF THE RED HOWLER MONKEY (*ALOUATTA SENICULUS*) IN A TROPICAL DRY FOREST FRAGMENT IN NORTHWESTERN COLOMBIA

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Introduction

The tropical dry forest is one of the most endangered habitats in Colombia. This habitat has been reduced to 1.5% of its original range due to anthropogenic effects (Murphy and Lugo 1986; Ramírez and Tesillo 2001). New World primates are dependent on arboreal habitats, so habitat loss

in this region has caused primates to be restricted to the remaining forest fragments. Although habitat destruction continues to threaten Neotropical primates (Defler 2003; Michalski and Peres 2005), there are some species that can persist in these disturbed ecosystems (Crockett 1998; Horwich 1998). The red howler monkey (*Alouatta seniculus*) is the primate with the largest range of distribution in Colombia (dwelling in habitats from 0 to 3200 meters above sea level) and seems to be the most adaptable of these primates, occurring in habitats with a minimal amount of forest where other species of primates have disappeared (Crockett 1998; Horwich 1998; Defler 2003). Although *A. seniculus* is not considered endangered in Colombia (it is categorized as “Low Concern” for this country) (Defler 2003), populations of this species inhabiting tropical dry forest could be threatened with extirpation due to habitat loss and fragmentation. Although *A. seniculus* is one of the most studied Neotropical primates, few studies have reported the status of its populations in tropical dry forest fragments (Green 1978; Salazar 2000; Avila and Padilla 2005). This study reports a survey of *A. seniculus* in a conserved remnant of tropical dry forest at Hacienda El Ceibal, Municipio de Santa Catalina, Bolívar, Colombia with the aim of estimating density and evaluating population structure of this species in the area. At the study site the Fundación Proyecto Tití (FPT) has carried out long-term investigations on the cotton-top tamarin, *Saguinus oedipus*, and led conservation activities including community-based programs.

Methods

Study area

Data were collected from the remnant of tropical dry forest (300 ha) at Hacienda El Ceibal (10°37'36" N; 75°14'50" W) located in northwestern Colombia (Figure 1). This forest fragment is located in the northern part of the Hacienda El Ceibal and is surrounded by pasture for cattle ranching. The study area has a maximum elevation of 34 m.a.s.l. and temperature ranges from 24 to 38 °C. Rainfall (1200 mm/yr) varies seasonally with two dry seasons, one from January to March and one in December. Ramírez and Tesillo (2001) report that 75–80% of the trees lose their leaves during the dry season of January to March. Although this forest fragment is not a national park or sanctuary, it is under protection for conservation by the Fundación Proyecto Tití since the establishment of biological station in 1999. Three species of primates inhabit this forest fragment: *S. oedipus*, *A. seniculus*, and *Cebus capucinus*. However, of these three primate species, only *S. oedipus* had been subject of studies in this area.

Data collection

We estimated the density of red howler monkeys following the protocol presented by Peres (1999). From November 28 to December 1, 2005, five transects ranging from 800 to 1200 m were prepared from south to north in the forest fragment (Fig. 1). These five transects were walked from December 2005 to February 2006. Transects were