

3 Monkeys on the Islands and Coasts of Paradise

Pre-Hispanic Nonhuman Primates in the Circum-Caribbean Region (300–1500 CE)

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Monos en las islas y costas del Paraíso: Primates no-humanos prehispánicos en la región circum-caribeña (300–1500 d.C.)

Resumen

Este capítulo presenta una revisión exhaustiva de la interacción de los pueblos indígenas del circum-Caribe con los primates no-humanos antes y durante el primer contacto europeo. Llena vacíos significativos en la literatura académica contemporánea al proporcionar una historia arqueológica actualizada de los roles sociales y simbólicos de los monos en esta región. Se inicia describiendo el registro de restos zooarqueológicos de primates en los sitios arqueológicos cerámicos insulares y costeros del circum-Caribe. Además, a partir de las últimas investigaciones arqueológicas que utilizan métodos y técnicas novedosas, también revisamos otras pruebas biológicas de existencia de monos. Igualmente, recopilamos las imágenes de material portátil hechas por indígenas y revisamos el arte rupestre que presuntamente representa primates en el Caribe. Trascendiendo 1492, la investigación se complementa con la adición de fuentes documentales escritas, específicamente, información etnoprimatológica de fuentes etnohistóricas tempranas sobre las múltiples interacciones entre humanos y monos en las primeras sociedades coloniales. Finalmente, destacamos ciertos patrones que habrían caracterizado las relaciones entre humanos y monos en las sociedades pasadas de la región circum-caribeña (300-1500 d.C.) y, de esta manera, abrimos caminos para futuras investigaciones sobre este tema.

Palabras clave

Arqueología costera e isleña – arqueoprimatología – Grandes y Pequeñas Antillas – período cerámico – Saladoide – Taíno – Isla de Trinidad – Venezuela

Abstract

This chapter presents a comprehensive review of the interaction between circum-Caribbean indigenous peoples and nonhuman primates before and at early European contact. It fills significant gaps in contemporary scholarly literature by providing an updated archaeological history of the social and symbolic roles of monkeys in this region. We begin by describing the zooarchaeological record of primates in the insular and coastal circum-Caribbean Ceramic period archaeological sites. Drawing from the latest archaeological investigations that use novel methods and techniques, we also review other biological evidence of the presence of monkeys. In addition, we compile a list of indigenously crafted portable material imagery and review rock art that allegedly depicts primates in the Caribbean. Our investigation is supplemented by the inclusion of written

documentary sources, specifically, ethnoprimateological information derived from early ethnohistorical sources on the multifarious interactions between humans and monkeys in early colonial societies. Finally, we illustrate certain patterns that may have characterized interactions between humans and monkeys in past societies of the circum-Caribbean region (300–1500 CE), opening avenues for future investigations of this topic.

Keywords: Archaeoprimateology, Ceramic period, Greater and Lesser Antilles, Island and coastal archaeology, Saladoid, Taíno, Trinidad, Venezuela

3.1 Introduction

In this chapter we describe and analyze the archaeological material culture, indigenous depictions, and documentary sources of nonhuman primates (hereafter referred as to ‘primates’) in the circum-Caribbean region between circa one millennium before European conquest into early colonial times. Several scholars examined the primate fossil record of the Caribbean, including Ford (1990), Gutiérrez-Calvache and Jaimez-Salgado (2007), Horovitz and MacPhee (2012), MacPhee and Horovitz (2002), and Silva-Talboda et al. (2007). Wing (2012) has listed some archaeological sites with pre-Hispanic remains of primates from this part of the world. However, a recent history of the archaeological presence of monkeys in the Caribbean is lacking in scholarly literature. We aim to fill this gap and present a comprehensive review of the interactions of Caribbean indigenous peoples with primates. Therefore, the objective of this study is to: (a) describe the available osteological remains – and other biological evidence – of primates from insular and coastal Ceramic Age archaeological sites; (b) compile information on material culture that depicts primates; (c) discuss ethnoprimateological information from ethnohistorical sources of the region; and (d) characterize patterns of interactions between humans and monkeys in the circum-Caribbean region.

3.2 The Bioarchaeology of Primates in the Circum-Caribbean Region

This section explores the biological presence of primates in the Caribbean. It mostly encompasses osteological remains as well as biological evidence, such as DNA extracted from human coprolites and a hair sample. Determining taxonomic identification is based on the closer local populations of monkeys, either primates currently inhabiting archaeological sites or the nearest primate populations to the sites with allochthonous primate samples. Figure 3.1 presents the distribution of those archaeological sites. No primate osteological remains have been found at island and coastal Mayan archaeological sites (see Valadez, 2014; Chapter 1).

3.2.1 Osteological Evidence

Herein, we present data on cranial and postcranial remains of monkeys in archaeological sites from four Caribbean islands and three northern South American



Figure 3.1 (a) Distribution of the island and coastal archaeological Ceramic sites with primate remains in the circum-Caribbean region. (b) Distribution of osteological remains of primates in archaeological sites on the island of Trinidad. (Base maps from Wikimedia Commons-CC BY. Creators: San Jose, 2006, and Guettarda, 2006, respectively).

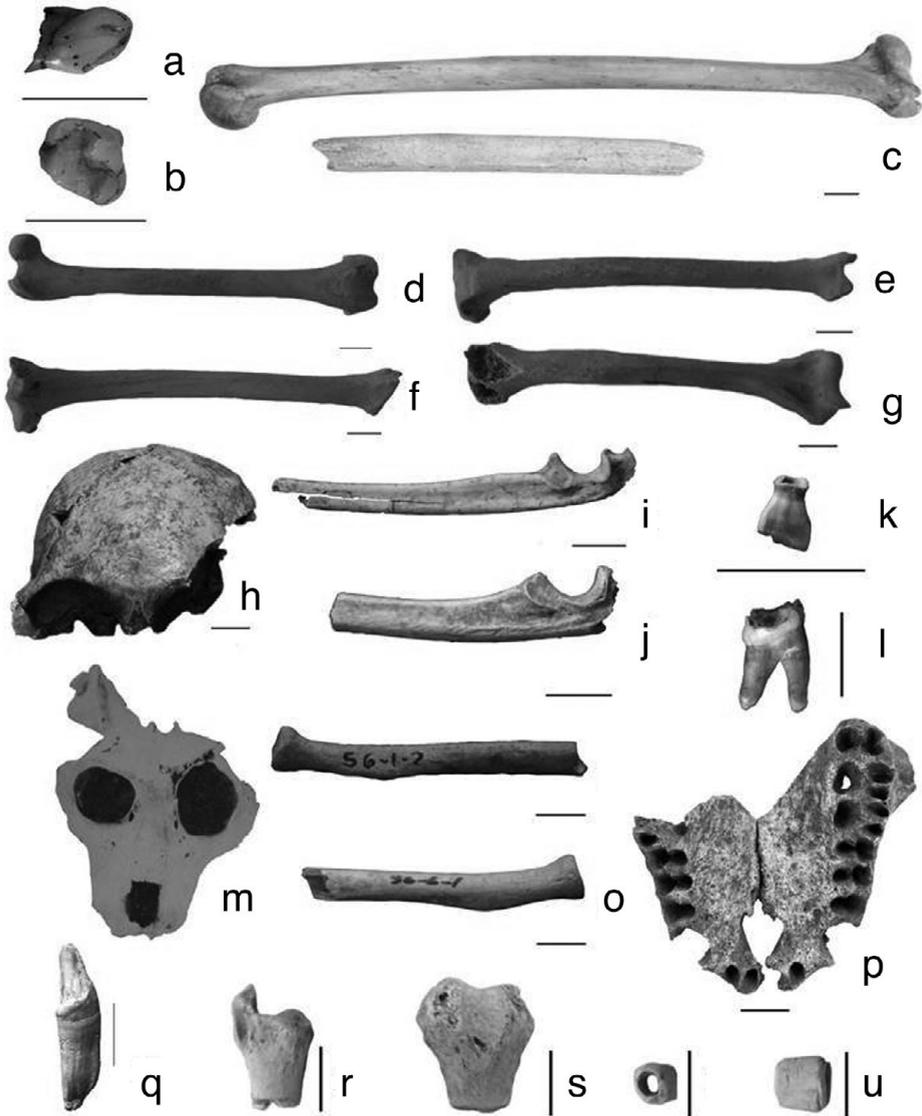


Figure 3.2 Samples of primate remains from Ceramic sites of the circum-Caribbean region. See text for localities, descriptions, and contexts. The bars equal 1 cm. Photographs by T. A. Wake (a, b, c) B. Urbani (d, e, f, g, h, i, j, k, l, n, o), I. Vargas-Arenas (1979, plate 58) (m), N. R. Cannarozzi (p), D. C. Nieweg (q), and L. A. Carlson (r, s, t, u).

locations as well as the island of Trinidad (Fig. 3.2). The information presented is from the Panamanian Island of Colón in the southwestern Caribbean, Bonaire, Aruba, and the island of Dos Mosquises in Los Roques Archipelago of Venezuela, located in the middle of the southern part of this region (Fig. 3.2). Three sites on the coast of mainland Venezuela are also listed, and the account finishes with the island

of Trinidad (Fig. 3.2). The latter island has the greatest number of sites with primate remains. Primate species found at these archaeological sites included various species of spider, howler, and capuchin monkeys.

3.2.1.1 Drago Site, Colón Island, Northwestern Panama

Site Description and Dating

Sitio Drago is strategically located on the northwestern-most point of Isla Colón at the westerly passage into the Bocas del Toro Archipelago, in northwestern Panama. The site covers approximately 18 ha and consists of a cluster of low earthen mounds located on a stabilized beach ridge with a mortuary mound near its center. The archaeological deposits are up to 2 m in depth in the excavated mounds and near 50 cm–1 m deep in the spaces between them. As of 2016, some 61 one square meter excavation units have been excavated to between 0.3 m and 1.5 m in depth. The project has emphasized excavation of the most conspicuous low earthen mounds visible at the site, Mounds 1, 6, 10, and 15 (the mortuary mound). A suite of 55 radiocarbon dates indicate that Sitio Drago was occupied for approximately 750 years between 700 CE and 1450 CE (Wake and Martin, 2016). Specifically, the radiocarbon dates related to the excavated primates are 870–1050 CE or 1050 ± 60 BP (Unit 1N; Beta-182651, howler monkey); 870–1150 CE or 1050 ± 70 BP (Unit 1N; Beta-182655, spider monkey); and 990–1210 CE or 960 ± 60 BP from Unit 2 (Beta-196143, spider monkey). The recovered material is currently held in the University of California, Los Angeles (UCLA) Zooarchaeology Laboratory (first report in this study). The comparative reference specimens used are held in the comparative osteological collection in the Zooarchaeology Laboratory of the UCLA Cotsen Institute of Archaeology, the UCLA Dickey Natural History Collection and the University of California, Berkeley, Museum of Vertebrate Zoology.

Description of the Primates

The monkey specimens recovered from archaeological contexts at Sitio Drago include the crown of one deciduous right upper incisor (I¹) identified as a young adult of *Alouatta* cf. *A. palliata* from Unit 1N, Level 10–20 cm below surface (buccolingual length: 3.66 mm; Fig. 3.2a), the crown of a recently erupted right upper M² identified as a young individual of *Ateles* cf. *A. geoffroyi* from Unit 2, 40–50 cm bs (buccolingual length: 7.19 mm; Fig. 3.2b), and one left humerus proximal shaft fragment bearing cut marks identified as an adult *Ateles* cf. *A. geoffroyi* from Unit 1N, 90–100 cm bs (maximum length: 113.61 mm; Fig. 3.2c). The cut marks visible on the spider monkey humerus shaft fragment suggest processing for consumption. Two diurnal monkey species, the white-faced capuchin (*Cebus capucinus*) and the mantled howler monkey (*Alouatta palliata*), and one nocturnal species (*Aotus zonalis*) currently inhabit Isla Colón (Urbani, 2003). Spider monkeys (*Ateles geoffroyi*) are still present in mainland Bocas del Toro, but not on any of the islands in the archipelago. No

monkey specimens have been previously reported from the Bocas del Toro region (Grayson, 1973, 1978; Linares and White, 1980).

Context and Associated Archaeological Material

Unit 1N was placed in one of the largest mounded structures at the site (Mound 6) and Unit 2 in a large, low mound 100 m north of Mound 6, termed Mound 10. Distinct stratigraphic levels are difficult to distinguish in the deposits at Sitio Drago due to the overall consistent dark sandy soil matrix, so arbitrary 10 cm levels were used in all excavated units. The soil matrix across the site consists of a dense, dark artifact- and ecofact-rich anthrosol. Where sterile levels have been encountered an abrupt shift from the rich anthrosols to light yellow sterile coralline beach sand is obvious. Artifacts recovered include numerous ceramic fragments, including diagnostic sherds representing vessels originating from several hundred kilometers away in central Panama, Pacific coastal Chiriquí, and northwest Costa Rica, and various locally produced wares with applied human, marine and terrestrial invertebrates, fish, birds, and mammals on (Wake, n.d.). Other artifacts include sculptural and metate fragments, basalt axes, chisels, and projectile points, shell beads, and ornaments, and a few bone tools, (Wake et al. 2021; Wake and Martin, 2016; Wake et al., 2004, 2012, 2013). The white beach sand parent soil facilitates excellent preservation of organic materials, resulting in the collection of large samples of molluscan and vertebrate faunal remains as well as a wealth of carbonized plant remains (see Martin, 2015; Wake 2006; Wake et al., 2013).

3.2.1.2 Isla Site, Island of Aruba

Site Description and Dating

The Isla site is located in southwest Aruba approximately 900 m from the shore. It consists of various limestone terraces and a seaward dipping top surface. Predominantly sandy soils are present at the Isla site (De Buissonjé, 1974; Grontmij & Sogreah, 1968). Isla is 67 to 70 m a.s.l. Weathering has formed several gullies around the site. The gully Rooi Lamoenchi runs from Isla toward the southwest coast and empties into a *saliña* (salt lake) at Pos Grandi which connects to the sea. Isla has dense xerophytic vegetation and there are a number of small and large limestone rock shelters (abris) present. Human burials were first found at the site in 2000 (abri 1) as well as in 2002 (abri 2), both located some 30–40 m a. s. l. The abri 1 burial also contained bones of a nonendemic monkey. Isla is located within the site catchment area of the Ceramic Age (900/1000–1515 CE) village of Savaneta (Sabaneta). The human bones were recovered in a secondary burial context and are not robust like those of Aruba's Archaic Age (1500 BCE to 900/1000 CE) inhabitants, suggesting Ceramic Age or maybe Early Historic Age burials. Three radiocarbon dates from Savaneta place its main occupation between 950 and 1250 CE, but evidence shows that Amerindians were still living there when the Spaniards arrived in the early 16th century (Dijkhoff, 1997; Mickleburgh, 2013; Oliver, 1989, 1997).

Description of the Primates

Four primate postcranial elements are identified from the Isla site (Urbani, 2016a). These elements include a complete right femur (maximum length: 113.89 mm; Fig. 3.2d), a complete left tibia (maximum length: 110.46 mm; Fig. 3.2e), a complete right tibia (maximum length: 109.75 mm; Fig. 3.2f), and a partial left humerus (maximum length: 98.8 mm; Fig. 3.2g). There is no evidence of cut marks or burning. The bones are fully developed. The femur lacks the medial inclination as in *Homo* (D. Ruiz-Ramoni, pers. obs.) and appears to be primate. A fifth incomplete bone may represent an ulna (Urbani, 2016a; M. L. P. Hoogland, pers. obs., 2020). The sample is identified as *Cebus* cf. *C. brunneus*, after considering the closest capuchin populations in the northern Venezuelan coast. These remains are part of the collection of the National Archaeological Museum Aruba (NAMA) located in Oranjestad (first published in this study). The osteological remains from Aruba and Venezuela (see Sections 3.2.1.2 and 3.2.1.4–3.2.1.7) were compared with Neotropical primate samples stored in the Museo de Ciencias de Caracas and the Museo de Zoología of the Instituto de Zoología y Ecología Tropical at the Universidad Central de Venezuela in Caracas. In the latter, the primatological collection from the region of Barlovento, Miranda state, Venezuela, was used for comparative purposes as it includes individuals of different sexes and ages (see Cordero-Rodríguez and Boher, 1988).

Context and Associated Archaeological Material

Surveys were carried out at Isla in 2000, 2002, 2004, and 2006. When the bones in abri 1 were found, they were removed by the discoverer and the police, destroying the exact anatomical context of this burial. Preliminary analysis indicated that it must be a secondary burial. Cranial bones, a mandible, and two mastoid processes of a young adult woman (17–25 years) and a few unfused long bones and a maxilla of a child (8 ± 2 years) were identified. The other bones correspond to a monkey. Furthermore, some stones, probably red limestone or manganese, were found in the contents of abri 1 (Dijkhoff, 2001). A red dye may have been purposely placed on the outside and inside parts of some of the cranial bones, while the mandible also has some of this dye on it. The monkey, identified as *C. cf. brunneus*, represents the first zooarchaeological evidence of a primate found in Aruba (Urbani, 2016a). Isla is also the first site on the island with a secondary burial in an abri and a human burial with an animal. Furthermore, the Isla find is only the second human burial located outside of the village. The other site is located at Budui at the northeast coast. The buried individuals were probably of high status based on the site's exceptional location and association with the Santa Cruz village (site catchment area) and may be from the Ceramic Age or Early Historic period (Tacoma and Versteeg, 1990; Versteeg, 1990). During Aruba's Ceramic Age, the island was occupied by sedentary, ceramic-producing agriculturalists, archaeologically known as the Dabajuran people and historically known as the Caquetío. Aruba belonged to the core area of the Coastal Caquetío Polity, which was socio-politically organized into a paramount chiefdom (Dijkhoff and Linville, 2004; Oliver, 1989, 1997).

Abri 2 is located at a distance of 21.40 m from abri 1 in a 20° northwest direction. As with abri 1, human bones became exposed on the surface as a result of postdepositional erosional processes. These included bones and teeth of at least one adult and a child. The remaining deposit was left in place for future investigation. Much farther from these two abris, a third large abri (no. 3) was found to contain a few shell artifacts. Surveys yielded artifacts in the vicinity of the abris, including a few ceramic Ordinary Ware sherds, some stone tools, a few pieces of red limestone or manganese, colonial glass and shell, including shell tools. The paucity of archaeological material together with the contents of the two abris do not suggest intensive use or long-term activities at Isla. The site could have had a ceremonial function, possibly associated with high status people.

3.2.1.3 Wanápa Site, Island of Bonaire

Site Description and Dating

The Wanápa site (B-016) is the largest Ceramic Age permanent settlement in the central-eastern part of the island of Bonaire, which lies to the north of the coast of western Venezuela, in the southeastern Caribbean. The site is located *ca* 1 km inland from the mudflats and mangrove thickets of Lac Bay, which is connected to the open Caribbean Sea. The terrain is relatively flat, and the soils have drainage suitable for indigenous horticulture including manioc and maize. Subsistence of the Wanápa inhabitants was based on horticulture and complemented by fishing, mollusk gathering and hunting. Fresh water, lithic and clay sources are available nearby (Haviser, 1991: 127–128, fig. 49 and table V). This site was excavated by H. R. van Heekeren in 1960 and by J. Haviser in 1987 (Haviser, 1991: 123–124, 149, fig. 54; van Heekeren, 1960, 1963; see also du Ry, 1960). The Wanápa site was inhabited longer than any other archaeological site on Bonaire with an initial Archaic Age date of 2975 ± 45 or 1025 BCE obtained from a shell sample. The Ceramic Age strata of this site are dated by charcoal samples to between 1480 ± 25 BP (470 CE), 885 ± 45 BP (1065 CE), and 505 ± 35 BP (1445 CE) (Haviser, 1991: 51, fig. 27).

Description of the Primate

In 1990, Elizabeth Wing in personal communication with Jay Haviser (1991) suggested that the monkey remains recovered at the Wanápa site represent a juvenile individual of *Cebus* sp. She further suggested that they “were of sufficient number to possibly suggest that the whole animal was brought to the site” (Haviser, 1991: 159). Wing concluded that the remains of nonlocal mammals in this site, including these monkey bones, may indicate that they were used as either food items or were traded from beyond Bonaire (Haviser, 1991). The remains of this monkey are curated in the Environmental Archaeology Program collections at the Florida Museum of Natural History of the University of Florida in Gainesville, USA (FM-EAP). Considering Wing’s identification and the closest capuchin population in Venezuela, the sample is preliminarily identified as *Cebus* cf. *C. brunneus*.

Context and Associated Archaeological Material

The bones identified by Wing as *Cebus* sp. were recovered in the living or residential area (Area B) of the Wanápa site, where the remains of an indigenous house structure were found (Haviser, 1991). The ulna of an ocelot (*Felis pardalis*) was also found there suggesting that this bone was brought to the site as a special object (Haviser, 1991). The zooarchaeological sample also contains remains of various indeterminate rodents including vesper mice (*Calomys* sp.). The most abundant vertebrate remains represent diverse reef fish and marine turtles (Haviser, 1991). Abundant potsherds, lithic, stone, shell and bone artifacts and body adornments pertaining to the Dabajuroid archaeological culture were also recovered at the Wanápa site.

3.2.1.4 Dos Mosquises Site, Los Roques Archipelago, Venezuela

Site Description and Dating

A skull of a howler monkey was recovered in 1983 during systematic archaeological excavations on Dos Mosquises island (DM/A site), in the Los Roques Archipelago, Venezuela in Trench B in cultural strata between 20 and 40 cm below the surface (Antczak, 1999; Antczak and Antczak, 2006). The site has been interpreted as a multifunctional temporary campsite pertaining to the Valencioid culture from the north-central region of mainland Venezuela. These Valencioid peoples navigated dugout canoes across the 135 km of open sea that separate the mainland from the oceanic islands of Los Roques. Economic targets of these voyages were the dense populations of queen conch (*Lobatus gigas*) and other marine resources such as turtles, fish, other molluscs, and salt. Valencioid peoples (see e.g. Cruxent and Rouse, 1958; Rouse and Cruxent, 1963) are the descendants of the Arauquinoid Cariban-speaking migrants who arrived in the Lake Valencia Basin from the Middle Orinoco area circa 800 CE (Antczak et al., 2017a). An absolute carbon-14 date was obtained from charcoal extracted from one of the Valencioid hearths in Trench B is 490 ± 80 BP or 1460 CE (sample LR/DM/A/B/9 sample, # I-16,294, Teledyne Isotopes). The monkey skull itself has not been directly dated. All archaeological material recovered in the DM/A site, including the monkey skull, is curated in the Unidad de Estudios Arqueológicos of the Instituto de Estudios Regionales y Urbanos at the Universidad Simón Bolívar (USB), Caracas.

Description of the Primate

The sample (Inv. # 1156, Fig. 3.2h) is a cranial vault with a partial occipital area around the condyles and foramen magnum flanked with a partial temporal auditory bulla. This piece presents a conspicuous broken frontal part along with the two parietals. The right parietal, near the bregma, has a second small fracture in the anterior half and the left anterior corner is absent. Even though nasal bones are missing, the nasion landmark remains. The supraorbital ridge of the left side is missing. The lack of both temporal crests in the vault but the presence of full closures

of the sutures seem to point into a young adult individual of undetermined sex. The first identification of this specimen was made by Omar Linares (USB) who referred to it as a “subadult female” representing *Alouatta seniculus* (Antczak, 1995). The absence of temporal crests as seen in mature male individuals might have helped Linares to determine the age and sex of this individual. Antczak and Antczak (2006) provided an opposite three-quarter view of this piece and Urbani (2021) presented a lateral view. Following current taxonomic nomenclature, the animal is identified as *Alouatta* cf. *A. arctoidea*.

Context and Associated Archaeological Material

The monkey skull was found in a so-called cache deposit in the DM/A site. It was associated with diverse nonperishable objects made of pottery, stone, bone, and shell. The deposition of small, solid pottery figurines together with mammal mandibles, oleoresin fragments, land snail (*Labyrinthus plicatus*) pendants, shell and micro vessels was initially observed at an Ocumaroid campsite in Domusky Norte Island, adjacent to Dos Mosquises. This site dates to the first two centuries after 1000 CE and appears related to the Arawakan-speaking bearers of the Ocumaroid pottery (Antczak, 2000). At the later Valencioid campsite in Dos Mosquises, this initial patterning continues, with ceramic pipes, bone flutes, mammal skulls (feline and monkey), mineral ochre, oleoresin and ceramic ocarinas and burners being added (Antczak and Antczak, 2017). The recovery of these objects together suggests that the assemblages of practice related to ritual activities presided over by shamans (Antczak and Antczak, 2006; Antczak and Beaudry, 2019). Various ecofacts were also recovered from Trench B including *Lobatus gigas* and other shells, bird bones, turtle and fish bones and otoliths (Antczak et al., 2017b). The monkey skull was included into the category of unmodified bones recovered from the DM site. Trench B also yielded cranial vaults and mandibular fragments of wild cats (*Felis wiedii*, *Leopardus pardalis*) (Antczak, 1999). Isotopic analyses of the feline bones demonstrate that they came from the Lake Valencia Basin on the mainland. This region possesses the variation in geochemical conditions to account for the isotopic diversity of all the analyzed exotic tooth specimens at the site and is closest to Los Roques Archipelago (Laffoon et al., 2016). The combined isotopic and archaeological data demonstrate that some of mammal bones originated within the Valencioid Interaction Sphere that linked various communities within Lake Valencia and surrounding regions between 1200 CE and European Conquest (Antczak and Antczak, 1999, 2006). Based on the archaeological evidence, we suggest the howler monkey skull is derived from the same region.

3.2.1.5 Palmasola Site, North-Central Venezuelan Coast

Site Description and Dating

Palmasola is located near the town of Morón, in the Venezuelan state of Carabobo, on the country's north-central coast. The site has been excavated by Sýkora (2006)

between 1995 and 2001 with the occasional participation of M. M. Antczak and A. T. Antczak. Palmasola was a permanent settlement whose inhabitants obtained, processed, and consumed diverse food resources but focused on marine fish and molluscs. They crafted local pottery, basketry, tools, and body adornments in stone, bone, and shell. The site also shows evidence of ritual activities, especially related to mortuary practices. Sýkora (2006) suggests that the origin of Palmasola pottery is stylistically related to that of the Coastal Saladoid archaeological culture (see Rouse and Cruxent, 1963) that were extending their influence from the east. Absolute dating of Palmasola archaeological site is lacking. The relative dating proposed by Sýkora (2006) was based on the analysis of pottery and other materials recovered in Palmasola and its interrelationship with other phenomena detected in adjacent regions. Accordingly, the human occupation of Palmasola started *circa* 200 CE and continued uninterrupted until European Conquest. The site was likely still inhabited during the early colonial times (Sýkora, 2006). Much of the archaeological material from this site is currently deposited at the Unidad de Estudios Arqueológicos at USB.

Description of the Primates

“Bone remains of a capuchin monkey (*Cebus olivaceus* [Schomburgk, 1848]) were found at Palmasola in Level 3 (number of identified specimens [NISP] = 1) and Level 2B (NISP=2); but were most numerous in Level 2A (NISP = 5), accounting for MNI [minimum number of individuals] = 1 out of a total MNI of 74 and an NISP of 1527” (Sýkora, 2006: 506, 517–518). Sýkora (2006: 633) identified an adult primate “right auditive bulla with its parietal [part]” referred to *Cebus olivaceus* (= *C. brunneus*). The author also reported harpoon points with different thin and curved points (38–55 mm) made of diaphyses of small mammals such as *Didelphis marsupialis* and *Cebus brunneus* (Inv. PPPAY11), among others. Sýkora (2006) also identified a radius of a capuchin monkey (Inv. PIUPMV41) which finally seems to be an ulna of a young animal according to the published photograph (B. Urbani, pers. obs.) that was described as an object that has a slightly modified distal section, possibly rounded by the action of use. The *Cebus* radius measures 60.3 mm in length (Sýkora, 2006).

These three elements were lost in the previous institutional repository. Additional primate osteological material was found in the current collection held at UEA-USB in Caracas. This material was identified preliminarily by A. Sýkora and later revisited by B. Urbani. This new material is reported for the first time in this chapter. The sample consists of: a partial left ulna (F22–2A, trochlear notch length: 8.34 mm; Fig. 3.2i); a partial right ulna with apparent cut marks (F10–26, trochlear notch length: 8.82 mm; Fig. 3.2j); and an upper right incisor, I₁ (F23–20, buccolingual length: 2.95 mm; Fig. 3.2k). They are all recognized as juvenile *Cebus* cf. *C. brunneus* by Sýkora and confirmed by Urbani in this study. Sýkora also recognized two capuchin premolars that remain to be precisely identified, as they may represent some other terrestrial mammal. An additional tooth is identified as a lower left molar, M₂, of an adult ursine howler monkey (*Alouatta* cf. *A. arctoidea*, FR-3, buccolingual length: 6.29 mm; Fig. 3.2l).

Context and Associated Archaeological Material

The indigenous inhabitants of Palmasola (*Palmasolenses*) are considered representatives of the Saladoid-Ocumaroid culture (makers of Saladoid and Ocumaroid pottery, as defined by Cruxent and Rouse [1958]; Rouse and Cruxent [1963]). Monkey remains had no specific spatial/depositional association at the Palmasola site. They were found in habitational refuse areas, in secondary contexts that may have been affected by trampling, bioturbation, redeposition and many other postdepositional taphonomic processes all occurring in a matrix of sandy beach soil. Zooarchaeological remains from this site include skeletal elements of tapir (*Tapirus terrestris*), manatee (*Trichechus manatus*), peccary (*Tayassu pecari*), deer (*Mazama* sp. and *Odocoileus virginianus*), diverse rodents and porcupines, a rabbit, and a squirrel.

3.2.1.6 El Cuartel Site, Eastern Venezuelan Coast

Site Description and Dating

A single monkey specimen was recovered from the site of El Cuartel located in the coastal city of Carúpano, Sucre state, eastern Venezuela. This site consists of mounded ceramic deposits covering an area of 25,000 m² (Vargas-Arenas, 1979). The layer (S1.9.3) where the monkey specimen was found dates to 1055 CE, 895 ± 90 BP (IVIC SI854) (Vargas-Arenas, 1979). The El Cuartel material is currently held in the archaeological collection of the School of Anthropology at the Universidad Central de Venezuela; however, the primate specimen in question was not encountered when this collection was visited.

Description of the Primate

A large fragment of a howler monkey cranium was reported by Vargas-Arenas (1979: Plate 58a), originally identified by O. Linares (M. Sanoja, pers. comm.) (Fig. 3.2 m). The partial right side of the frontal area is exposed and shows a marginal temporal crest that is characteristic of *Alouatta*. Although the left zygomatic arch is broken both bony orbits are present. The nasofrontal, internasal, and nasomaxillary sutures are visible. In addition, the exposed maxillary and nasal areas remain intact. Unfortunately, no measurements are presented, nor does the original photograph include a graphic scale. However, after a closer observation of the photograph, it appears to represent a young adult individual (B. Urbani, pers. obs.). The primate is identified here as *Alouatta* cf. *A. arctoidea*.

Context and Associated Archaeological Material

Ceramic material from the El Cuartel site appears related to the Saladoid tradition. The Saladoid were likely sedentary horticulturists. Some 230 (MNI) animals were recovered and the howler monkey cranium is associated with other animal food remains (Vargas-Arenas, 1979). Vargas-Arenas (1979) reported the presence of fishes, tortoises, crabs, birds, deer, and a sloth in the same layer (S1.9.3; 0.3–0.6 m)

where the howler monkey cranium was found. Stone tools, potsherds, and burned shells were also recovered. This is one of the two layers with the largest amounts of animals (MNI: 34, each layer).

3.2.1.7 Puerto Santo Site, Eastern Venezuelan Coast

Site Description and Dating

The site of Puerto Santo (S6) is located in a narrow valley close to the road on the small El Morro peninsula, between the coastal towns of Carúpano-Río Caribe-Güiria (Vargas-Arenas, 1978, 1979). The material was recovered in two 2×2 m units during a first field season. During a second field season, an additional 13 units were excavated (Vargas-Arenas, 1978). These excavations were conducted in mounds yielding ceramic material, shells, and animal remains (Vargas-Arenas, 1978). The author reported a charcoal sample dating to 425 CE or 1525 ± 80 BP (Teledyne I-9729). The zooarchaeological remains of this site are held in the archaeological collection of the School of Anthropology at the Universidad Central de Venezuela. This is a new archaeological primate record.

Description of the Primates

Distal fragments of two different adult howler monkey (*Alouatta* cf. *A. arctoidea*) radii were recovered from the site. One is a partial left radius (S6-1-2; length: 6.44 cm; Fig. 3.2n), and the other is a right radius fragment (S6-6-1; length: 6.33 cm; Fig. 3.2o).

Context and Associated Archaeological Material

Shell remains are abundant at this site, particularly *Donax* spp. and *Tivela* spp. (Vargas-Arenas, 1978). Ash lenses were found in the excavation units as well as black earth with abundant sherds. Evidence of a household floor, with postholes, pressed earth, and domestic fire was found in four units (Vargas-Arenas, 1978). Red-slipped sherds from the site are similar to those observed in collections from Puerto Rico and the Lesser Antilles (Vargas-Arenas, 1978). The author also noted the presence of incisions on some pottery sherds that resemble Barranroid style pottery. In fact, Vargas-Arenas (1978) suggested that this site has a relationship with both Barranroid and Saladoid peoples with influence from the Orinoco River. She suggested that the people at this coastal site had a mixed subsistence system based on fishing, mollusk gathering, hunting, and agriculture.

3.2.1.8 Archaeological Sites in the Island of Trinidad

Site Description and Dating

Seven Ceramic sites from Trinidad for which primate remains are curated in various institutions are presented in this section. Manzanilla (SAN-1) was excavated by Dutch archaeologists in the last two decades, and St. Catherine was excavated by

L. A. Carlson in 2004. Wing (1962: 41) indicates that she identified red howler monkey (*Alouatta seniculus*) at five Ceramic sites excavated by the Yale expedition: Mayo, Cedros, Erin, Palo Seco, and Quinam. Vertebrate faunal material from the sites of Mayo, St. John, Cedros, Erin, Palo Seco, Chagonaray, Quinam, Mayaro, and St. Joseph was included in Wing's (1962) dissertation, a pioneering work on zooarchaeology in the Caribbean region. Most of the zooarchaeological material studied by Wing was acquired during the Rouse and Goggin excavations conducted in 1946 and 1953, although bones from other excavations and additional sites are also included in her analysis (Wing, 1962). The Rouse and Goggin faunal materials came from seven Ceramic sites including the previously mentioned, St. Joseph and the pre-Ceramic St. John site. These sites were excavated in arbitrary levels and the soil was searched for artifacts and other cultural material. Additional faunal material later excavated by James A. Bullbrook at Erin and surface collected bones acquired by H. G. Kugler at Cedros were also included in Wing's analysis. In 1959, Wing visited Palo Seco, Mayaro (St. Bernard), Mayo, and St. John, as well as the sites of Chagonaray and Guayaguayare, and collected faunal material (Wing, 1962).

For reasons currently unclear, most of the collections from these excavations, along with Rouse's field documents, are curated at the Yale Peabody Museum Division of Anthropology, while a portion of the vertebrate material that Wing analyzed is curated at FM-EAP. The Trinidad collections curated in the FM-EAP include some of the faunal remains analyzed by Wing in her dissertation (Wing, 1962) and some likely analyzed by her students in later years. The entirety of the zooarchaeological collections analyzed by Wing and students from the Trinidad sites of Cedros, Palo Seco, Quinam, and Erin have been returned to the Yale Peabody Museum while a portion of the fauna from the sites of St. John, Mayo, St. Joseph, Chagonaray, and Mayaro remain in the FM-EAP collections. The Yale Peabody Museum and its collections were closed due to major restoration at the time this chapter was written. Since Wing's dissertation focused on the mammalian fauna in these sites, she did not report on the fauna of other taxonomic classes and these have not been sorted or analyzed, so they are also not reported here. No other cultural material from these sites is curated in the FM-EAP. The following descriptions for these sites are summarized from Boomert et al. (2013). As indicated above, apart from the sites described by Wing (1962), this piece also covers the information from the site of Manzanilla 1 (SAN-1) which is located in northeastern Trinidad and St. Catherine in the southeastern side of the island.

Mayo site

This site is a Spanish-Amerindian mission in the western portion of the Montserrat Hills in the southwestern part of Trinidad, about 6 km inland from the coast. The site includes a Roman Catholic church and a shell midden containing Amerindian pottery mixed with European colonial artifacts (Boomert et al., 2013). Rouse and Goggin excavated at the site in 1953. Boomert et al. do not list any radiocarbon dates for this site.

Cedros site

This is a Ceramic age site located in the southwestern part of Trinidad that includes a series of shell midden deposits. This is the type site for the Cedrosan subseries ceramics of the Saladoid series. Irving Rouse, Fred Olsen, and José M. Cruxent visited the site in 1969 to collect samples for radiocarbon dating (Boomert et al., 2013). The older of the two dates from the site is 2140 ± 70 BP, or 352–356 cal BCE (Boomert et al., 2013).

Erin site

This is another Ceramic, multicomponent shell midden located along the southern coast of Trinidad. Rouse excavated two trenches in the site in 1946. Artifacts from these excavations pertain to the Palo Seco and Erin complexes. Boomert et al. (2013) do not list any radiocarbon dates for this site.

Palo Seco site

This site is located along the southwestern coast of Trinidad. This multicomponent Ceramic site is the type site of the Palo Seco complex of the Cedrosan subseries, Saladoid series. The site includes several small distinct shell midden deposits. The site was initially excavated by J. A. Bullbrook in 1919, and I. Rouse returned to the site in 1946, excavating a large trench. The deposit included Cedros complex ceramics, as well as ceramics transitional between Cedros and Palo Seco. I. Rouse, F. Olsen, and J. M. Cruxent visited the site in 1969 to collect samples for radiocarbon dating (Boomert et al., 2013). Radiocarbon dates from the site range from 2130 ± 80 BP to 1480 ± 70 or cal 469–650 CE (Boomert et al., 2013).

Quinam site

This is a multicomponent Ceramic site located on the south shore of Trinidad. Quinam, like the other sites discussed here, is composed of several discrete shell midden deposits. Rouse excavated at the site in the summer of 1946, including a series of auger holes and five trenches. Most of the pottery from the site represents the Palo Seco and Erin complexes, and Boomert et al. (2013) do not list any radiocarbon dates for this site.

Manzanilla 1 (SAN-1) site

This site is located on Cocos Bay coastline close to the town of Lower Manzanilla in the County of St. Andrew, central-eastern Trinidad (Dorst et al., 2003). It is a 200×250 m flat plateau that drains to the Atlantic through the Nariva river basin (Dorst et al., 2003). In terms of ceramic styles, two ceramic complexes belonging to two different series are recognized at the Manzanilla 1 site. The material collected in the trench where the monkey specimen was recovered corresponds to the Cedrosan Saladoid series is represented by the Late Palo Seco complex (300–650 CE) (Harris, 1977). This coastal site was excavated over the last couple of decades by Dutch archaeologists under the auspices of the Archaeological Committee of Trinidad and Tobago. The archaeological material recovered from SAN-1 is currently curated in

the University of the West Indies and the Muséum National d'Histoire Naturelle in Paris and the reference comparative collection is located at the Naturalis Biodiversity Center at Leiden, the Netherlands.

St. Catherine (MAY-17) site

The site is located on the southeastern coast of Trinidad and approximately 1 km inland from Mayaro Bay, in the Hilaire river basin of Mayaro county. The site is on a Petrotrin petroleum company property (Harris, 1972). Excavation was carried out in 2004. Units A–F formed a trench that proved unproductive after 30 cm, although later excavations in the trench by Peter Harris (pers. comm.) encountered a deeper Cedrosan Saladoid deposit. Units Q, R, S, and T yielded Saladoid and Barrancoid pottery, stone tools, and an incomplete diorite bead, but few faunal remains. Units W, X, Y, and Z (Z was laid out but not excavated) were located further into the site on higher ground in a midden deposit that contained thousands of *Donax* sp. shells and many vertebrate faunal remains. Boomert (2010) mentions two components to the St. Catherine's site, with the deeper component (I) characterized by Cedrosan Saladoid pottery (Palo Seco style, 800 BCE). St. Catherine's I is one of two Saladoid sites on Trinidad with the fine-lined incised Mount Irvine style pottery from Tobago, which is related to the Río Guapo style in coastal Venezuela. St. Catherine's II dates to around 500 CE (Barrancoid) (Boomert, 2013). Observations made during 2004, indicate that the excavations were conducted in the late Saladoid-Barrancoid component (St. Catherine's II).

Description of the primates

A descriptive list of the primate remains recovered in Trinidad's Ceramic sites surveyed during the Yale Expedition, and originally reported on by Wing (1962), as well as those from the project in Manzanilla 1 and former L. A. Carlson's zooarchaeological research on St. Catherine is presented in Table 3.1. The archives of the FM-EAP also provided additional details on the *Alouatta* skeletal element specimen counts for the various sites analyzed by Wing (1962). Thus, identifications are listed in Table 3.1 and reflect not only Wing (1962) but also original identification data in the FM-EAP archives and recent reanalysis. In addition, FM-EAP personnel reassessed the primate specimens from the Mayo and St John sites originally identified by Wing and students. This provided additional information on the taxonomy, life stages, and element representation of red howler monkeys from these two sites. Verifications and new observations on Wing's (1962) identifications (by N. R. Cannarozzi) were made using specimens cataloged in the Florida Museum Mammals collection. No review was done of the material from the other Wing-analyzed sites. Access to this larger collection permitted the revision of two specimens originally identified as *Alouatta* (a femur and a canine tooth), to *Tamandua* sp. and Mammalia, respectively. These specimens were included in the NISP of the original analysis but have been excluded from calculations in this analysis. Wing's early identifications were presented at the species level as *Alouatta seniculus*. The

Table 3.1. Howler monkeys identified from archaeological Ceramic sites on Trinidad

Osteological element	Mayo ¹	Cedros	Erin	Palo Seco	Quinam	St Catherine	Manzanilla 1 ^a
Maxilla	1L,1R maxilla+premaxilla, 1 anterior (L), 1 complete (R) (Fig. 3.2p)	-	-	-	-	-	-
Mandible	-	-	2L,1R	-	-	1L, 1R	-
Canine	1R ¹ , 1 canine ¹ , complete; 1L mandibular C1, complete; 1L,1R maxillary C1, complete	-	-	1	-	-	1R (Fig. 3.2q)
Premolar	1L mandibular P1, complete	-	-	-	-	-	-
Molar	1R maxillary M1, complete; 1L maxillary M2, complete	-	-	-	-	-	-
Humerus	2L ¹ , 1 proximal ¹ , 1 distal (fused)	-	1L-distal	-	-	-	-
Radius	-	-	1L,1R,1 (side not recorded)	1-proximal	-	-	-
Femur	-	1L,1R	1L-distal	1L,1R-proximal	1L- proximal	-	-
Podials	-	-	-	-	1 Phalanx	-	-
Total NISP	12	2	8	4	2	2	1
Percent cranial	86	0	29	25	0	100	100
Percent postcranial	14	100	71	75	100	0	0

Note: ¹Elements from Mayo whose identifications that have not been verified and are not curated at the FM-EAP; ²Delsol & Grouard (2015) reported the presence of 7 individuals (MNI) of red howler monkey, *Alouatta seniculus* (= *Alouatta. A. cf. macconnelli*)

sample from these Ceramic sites are more likely from Trinidad's endemic howler population (*Alouatta* cf. *A. macconnelli*, using current taxonomy).

We report a total of 28 primate specimens (NISP) based on Wing's original identifications and the recently reanalyzed material from the Ceramic sites including Mayo, Cedros, Erin, Palo Seco, and Quinam; however, MNI could not be verified because not all specimens are curated in the FM-EAP, and therefore this count could not be evaluated. Without access to the full assemblage for verification, roughly half of these data can only be reported as listed in the archives. Nonetheless, combined, these provide a more robust dataset. In one of the two reanalyzed sites (Mayo, ceramic), cranial elements are more prevalent than post-cranial elements representing 86% of the NISP of red howlers. Cranial elements are represented exclusively by fragmented mandibles and maxillae, including both articulated and disarticulated teeth (e.g. Fig. 3.2p). The opposite is true for specimens reported in the FM-EAP archives by Wing and students in which postcranial elements are most prevalent. Femora are most frequently identified postcranial elements (NISP=6).

In the case of the site of Manzanilla 1, the faunal remains from Trench 3 include several elements from a non-feature context. One of these specimens is the canine (lower right mandibular) tooth of a howler monkey (buccolingual length: 6.40 mm, Fig. 3.2q) that is attributed to *Alouatta* cf. *A. macconnelli* (by D. C. Nieweg.; first report in this study). Delsol and Grouard (2015) mention that nine Cebidae individuals were recognized at Manzanilla 1 site, including seven red howler monkeys, *Alouatta seniculus* (*Alouatta* cf. *A. macconnelli*) and two capuchin monkeys, *Cebus albifrons*. No primate remains were recovered during the later campaigns at the Manzanilla site; however, most of the animal bones from these campaigns remain unanalyzed.

At St. Catherine, Carlson (2005, 2007) reported a red howler monkey (*Alouatta* cf. *A. macconnelli*) and white-fronted capuchins (*Cebus albifrons*) represented by two individual bone specimens per species. The red howler specimens include the left and right portions of a mandible and represent a single animal (Unit W, Level 6). These elements do not exhibit any evidence of anthropogenic modification. In contrast, the only capuchin specimens present in the samples are modified elements: one distal end of a left tibia (Unit X, Level 3. Fig. 3.2r), and one distal end of a right femur (Unit W, Level 4. Fig. 3.2s). The specimens occurred in spatially distinct test units and levels and may represent two individuals. The distal epiphyses of both specimens are fully fused and the proximal portions of both showed evidence of the diaphysis (shaft) being cut and snapped off. The diaphysis ends of the capuchin femur and tibia specimens are consistent with discard from bead manufacture. Furthermore, four beads made from mammal long bone diaphyses are present and were recovered within the same two units as the capuchin specimens. Although the modified specimens are only identifiable to mammal, they are commensurate in size, shape, and texture with the capuchin femur and tibia, suggesting use of capuchin long bones for bead manufacture (Figs. 3.2t, u). We suggest further analysis and testing because it is difficult to taxonomically identify modified bone specimens and finished artifacts. Unlike the red howler monkey, no unmodified capuchin specimens were identified at the site.

Context and associated archaeological material

As reported by Wing (1962), the primatological sample from the Ceramic sites of Mayo, Cedros, Erin, Palo Seco, and Quinam (MNI=14) represents 1.58% of the total number of identified individual mammals from those sites. Wing (1962) analyzed vertebrate faunal samples from the Rouse excavations and other collections now curated at the FM-EAP. She summarized her analysis of vertebrate fauna from several Trinidad sites as MNI by taxon and site in a single table (Wing, 1962). Wing reports red howler monkey as present in six of the nine sites in her table, but it is only 1.58 percent of the total MNI across sites. More abundant taxa include white-lipped peccary, agouti, collared peccary, paca, nine-banded armadillo, and opossum. These are the only data in the archaeological portion of her dissertation and therefore we cannot assess numbers of identified specimens (NISP), or element or age distributions, from that publication. At Quinam, Cedros, Erin, and Palo Seco; however, the sample size is much smaller in these sites compared to the Mayo site. None of the bones shows evidence of consumption, such as butchery marks or burning. It is unclear how these animals may have been used and if the differences in elemental distribution patterns reflect changes in use over time.

Of the sites not presented by Wing (1962), Manzanilla 1 is probably a food refuse deposit that includes animals such as tapir (*Tapirus* sp.), West Indian manatee (*Trichechus manatus*) vertebrae as well as reptile bones. The faunal remains were recovered from midden contexts at St. Catherine's. The red howler and capuchin monkey specimens contribute to the dominance of terrestrial mammals within the vertebrate assemblage. Terrestrial mammals contribute 72% of the total bone weight (1432.5 g) and approximately 42% of the minimum number of individual animals represented ($n = 146$) (see Carlson, 2005 for more detail). Table 3.2 shows detailed information on the context and associated material from the Ceramic period sites of Trinidad.

3.2.2 Other Biological Evidences

There are two other bioarchaeological materials of archaeoprimate interest in the Caribbean region (Fig. 3.1). From La Hueca, one of the Saladoid and Huecoid localities on the Sorcé Estate in the island of Vieques in Puerto Rico, pre-Columbian human coprolites were found. Radiocarbon dates shows a chronological span from 1300 CE to 220 CE (Rivera-Pérez et al., 2015 [Beta Analytic]). Using metagenomic ancient DNA, Rivera-Pérez et al. (2015) studied the coprolites and the proviral sequences found in Huecoid and Saladoid diets, confirming the presence of endogenous marmoset retrovirus (Rivera-Pérez et al., 2015). The authors stated that “the presence of retroviral DNA from marmoset New World monkeys may support the hypothesis of ancient organic trade between Caribbean and South American cultures” (Rivera-Pérez et al., 2015: 7). As no marmoset is present in the circum-Caribbean region, and simian foamy viruses are common in New World primates (see Ghersi et al., 2015; Santos et al., 2019), we propose that the reported marmoset

Table 3.2. Context and associated zooarchaeological material from archaeological Ceramic sites of Trinidad

Site name	Context	Associated zooarchaeological material
Mayo	Tr1a, 1st coll, surface and unknown proveniences, context undescribed	Zooarchaeological materials (from Wing, 1962): <i>Dasyopus novemcinctus</i> (14), <i>Tamandua longicaudata</i> (3), <i>Coendu prehensilis</i> (2), <i>Agouti paca</i> (12), <i>Dasyprocta aguti</i> (5), <i>Canis</i> (1), <i>Pecari tajacu</i> (17), <i>Mazama americana</i> (8)
Cedros	Excavation 1, Section A-5, Level 0.00–0.20 m	Zooarchaeological materials (from Wing, 1962): <i>Didelphis marsupialis</i> (5), <i>Dasyopus novemcinctus</i> (15), <i>Tamandua longicaudata</i> (2), <i>Agouti paca</i> (16), <i>Dasyprocta aguti</i> (14), <i>Proechimys guyannensis</i> (1), <i>Canis</i> (3), <i>Procyon cancrivorus</i> (2), <i>Herpestes auropunctatus</i> (4), <i>Pecari tajacu</i> (14), <i>Mazama americana</i> (23), <i>Bovidae</i> (1), <i>Trichechus manatus</i> (2)
Erin	Excavation 1, Section A-4, Level 1.20–1.40 m; Excavation 1, Section B-2, Level 1.20–1.40 m	Zooarchaeological materials (from Wing, 1962): <i>Didelphis marsupialis</i> (18), <i>Caluromys philander</i> (2), <i>Dasyopus novemcinctus</i> (10), <i>Tamandua longicaudata</i> (2), <i>Sciurus granatensis</i> (1), <i>Nectomys squamipes</i> (1), <i>Coendu prehensilis</i> (4), <i>Agouti paca</i> (14), <i>Dasyprocta aguti</i> (59), <i>Echimys armatus</i> (2), <i>Proechimys guyannensis</i> (2), <i>Canis</i> (1), <i>Procyon cancrivorus</i> (1), <i>Lutra enudris</i> (1), <i>Felis pardalis</i> (2), <i>Herpestes auropunctatus</i> (1), <i>Pecari tajacu</i> (11), <i>Mazama americana</i> (61), <i>Trichechus manatus</i> (1)
Palo Seco	Excavation 2, Section G-5, Level 0.20–0.40 m; Excavation 2, Section G-2, Level 0.20–0.40 m, Excavation 2, Section G-3, Level 0.40–0.60 m	Zooarchaeological materials (from Wing, 1962): <i>Didelphis marsupialis</i> (14), <i>Dasyopus novemcinctus</i> (18), <i>Tamandua longicaudata</i> (2), <i>Coendu prehensilis</i> (6), <i>Agouti paca</i> (41), <i>Dasyprocta aguti</i> (47), <i>Proechimys guyannensis</i> (2), <i>Felis pardalis</i> (1), <i>Pecari tajacu</i> (26), <i>Mazama americana</i> (76), <i>Bovidae</i> (1), <i>Tapirus</i> (1), <i>Trichechus manatus</i> (1), <i>Cetacean</i> (1)
Quinam	Excavation 1, Section A-2, Level 0.40–0.60 m; Excavation 1, Section A-3, Level 0.20–0.40 m	Zooarchaeological materials (from Wing, 1962): <i>Didelphis marsupialis</i> (4), <i>Dasyopus novemcinctus</i> (10), <i>Tamandua longicaudata</i> (2), <i>Agouti paca</i> (16), <i>Dasyprocta aguti</i> (26), <i>Lutra enudris</i> (1), <i>Felis pardalis</i> (2), <i>Pecari tajacu</i> (3), <i>Mazama americana</i> (27)

Table 3.2. (cont.)

Site name	Context	Associated zooarchaeological material
Manzanilla 1	Several units and one trench (T.3) were excavated. Most from a 2 × 2 m unit called small unit 6 (SU 6). Faunal remains from trench 3 (T.3; 22 × 2.5 m) and units 2 and 3 (LU2, LU3). Trench 3 at the so-called plaza area and a hypothetical third house area which is suggested by the presence of a large posthole and several burials	<i>Tayassu tajacu</i> (25.1%), <i>Mazama americana americana</i> (11.4%), <i>Agouti paca</i> (7.9%), <i>Dasyprocta agouti</i> (5.7%)
St Catherine	Fourteen 1 m ² test units by 10 cm arbitrary levels (see site description)	Carlson (2005, 2007) provides a full zooarchaeological description of this site. Prevalent mammals are <i>Dasyopus novemcinctus</i> (8%), <i>Dasyprocta leporina</i> (8%), <i>Mazama americana</i> (6.4%), Echymyidae (6.4%), and <i>Tayassu tajacu</i> (4.8%). Among other vertebrates, <i>Boa constrictor</i> (2.4%), <i>Caiman sclerops</i> (1.6%), <i>Tupinambis teguixin</i> (1.6%), <i>Rhysoprionodon porosus</i> (1.6%), and fishes like <i>Caranx hippos</i> (8.8%) and <i>Arius felis</i> (5.6%). Beads made with skate (Rajiformes) and requiem shark (Carcharhinidae) bones.

Comment: All taxonomic identifications from Elizabeth Wing in 1962 are presented as they were published by her with counts of minimum number of individuals. The information from Manzanilla 1 St. Catherine is based on current mammal taxonomy as identified by D. C. Nieweg and L. A. Carlson. Counts for these sites are based on percent of minimum number of individuals

retrovirus might has been present in atelids or cebids from Mesoamerica or northern South America trafficked to and consumed in this Caribbean island before the contact with the Europeans

Another bioarchaeological element of primate origin was recovered within the Turin Taíno cotton *ceμί* (1439±1522 CE) (Ostapkowicz and Newson, 2012). Found in a cave located west of Santo Domingo, in the Dominican Republic, this *ceμί*, included a sample of hair representing an undetermined Neotropical primate. This cut reddish-brown hair with diameter 34–35 μm. It was also described as having a regular, unicellular, and uniserial ladder covered by a mosaic/imbricated cuticle (Ostapkowicz and Newson, 2012). The comparative hair sample used by Ostapkowicz and Newson (2012) was from a squirrel monkey (*Saimiri sciureus*).

Finally, in the Venezuelan island of Margarita, there is an endemic subspecies of tufted capuchin monkeys (*Sapajus apella margaritae*) (Fig. 3.3). Today, this capuchin



Figure 3.3 Margarita tufted capuchin monkey (*Sapajus apella margaritae*).
(Photograph by Natalia Ceballos-Mago).

taxon is critically endangered (Ceballos-Mago et al., 2010). Linares (1998: 120) claimed that the absence of tufted capuchins from the Orinoco delta and the northern mountain range of Venezuela and the existence of exchange networks between societies of the Lesser Antilles and the Orinoquia “strongly suggest that the insular population [of capuchin monkeys] was established from tamed individuals transported by indigenous peoples from the Orinoco River.” Linares (1998) also suggested that the close similarity of insular and continental capuchin individuals and the lack of primates in the zooarchaeological record of the island seem to rule out a relatively recent introduction. Ceballos-Mago (2010, 2013) also proposed a possible eastern origin of this insular tufted capuchin population, such as the Guiana Shield in present-day Surinam, Guyana, and French Guyana. Close to the island of Margarita, a species of white-fronted capuchin monkey (*Cebus trinitatis*) –part of the South American white-fronted capuchin (*albifrons*) group – is reported on the island of Trinidad (Pusch, 1941). This primate taxon has the status of a critically endangered species (Phillips and Jack, 2016). Hershkovitz (1949: 350) indicated that “[*Cebus trinitatis* is completely cut off from its relatives by the northern portion of Venezuela [and] may have been introduced into Trinidad from Brazil or from the interior of Venezuela or Colombia.” He also pointed out that the closer populations of white-fronted capuchin monkeys are located in the “upper Orinoco region (*albifrons*) and in the Lake Maracaibo (*adustus*)” and were likely “introduced into the island through human agency” (Hershkovitz, 1949: 380).

3.3 Depictions of Primates in the Circum-Caribbean Region

In this section, we focus on evidence of a dozen primates depicted or allegedly depicted in Caribbean material culture (for conceptual connotations behind the terms ‘depiction’ and ‘representation’ used here, see Antczak, 2000). Figure 3.4 shows the locations of the sites where confirmed depictions of primates are found.



Figure 3.4 Distribution of island and coastal archaeological sites of the circum-Caribbean region with depictions of primates in portable objects. (Base map from Wikimedia Commons-CC BY. Creator: San Jose, 2006).

3.3.1 Confirmed and Alleged Portable Objects Depicting Primates

There are seven confirmed depictions of primates in the circum-Caribbean region (Fig. 3.5). In the Greater Antilles, the best known artifact bearing a primate motif was recovered in the Dominican Republic (Fig. 3.5a). The description on the collection file card at the Museo del Hombre Dominicano reads: “Extremely stylized monolithic cruciform axe. At the apex, there is a possible depiction of a monkey, with the hands on the sides of the face. The final part of the axe is the representation of a foot. It has a flange that divides the handle from the rest of the piece” (Olsen-Bogaert, 1981). This Taíno piece is an axe that measures approx. 35 cm long (Inv. # MHD-A000405–24-L) (Jorge Ulloa, pers. comm.), with symmetrical sides (García-Arévalo, 2019: 134). This axe probably represents a Taíno ceremonial artifact (Montás et al., 1983). The depiction of the primate is located in the upper part of the piece (Rimoli, 2010), measuring c. 6 × 6 cm without the tail. It was carved in a supine position, with both hands on the ears, flexed hindlimbs, and extended tail, and with a pronounced fringe and prognathic lower facial area. Also, Lovén (1935: Plate XI) presented a photograph of a different axe with an animal face that resembles a primate (former Mus. du Trocadéro Inv. # 2.331) (Fig. 3.5b). The piece measures 23 cm high and 11 cm wide (current Inv. # 71.1884.4.1, Musée du Quai Branly ‘Jacques Chirac’) (B. Urbani, pers. obs.). It was found in San Tomás de Jánico, near Santo Domingo, Dominican



Figure 3.5 Portable objects with primate depictions from archaeological sites of the circum-Caribbean region. See text for localities, descriptions, and contexts. Images not to scale. Photographs

Republic (Lovén, 1935). The head is rounded with a facial mask composed of a large brow ridge with lateral globular ears, and a prognathic lower part. This last morphological attribute is common to both axes with primate motifs and is different from the depictions of human faces in Taino axes. In both cases, the faces depicted are similar to cebine or ateline primates.

In the Lesser Antilles, Ostapkowicz (2018) reported a small carving of a parrot-like bird and a primate (height: 8.6 cm, width: 5.3 cm) forming a composite snuff tube (Fig. 3.5c). This piece was excavated before 1870 from a plantation in Charlotte Parish on the northeastern part of the island of Saint Vincent (Ostapkowicz, 2018; Fig. 3.4c). Ostapkowicz (2018) found similarity with black carvings reported from the Arauca River in the Venezuelan Middle Orinoco basin by Arroyo et al. (1971). She also suggested that it a possible import from the Lower Orinoco region of Venezuela (Ostapkowicz, 2020). Additionally, Ostapkowicz (2018) presents a three-quarters photograph of this carving. The unknown species of monkey is in a squatting position and displays a light facial mask and a relatively prognathic face. It is currently held in the Pitt Rivers Museum of the University of Oxford (Inv. # 1900.44.1). Recently, Ostapkowicz (2020) indicated that it might be related to the Orinoco's Barranoid style; however, after a review of Barranoid primatomorphic depictions (e.g. Urbani and Rodríguez, 2021), this insular object appears to depart from the stylistic repertoire of this ceramic group. Waldron (2009, 2011, 2016) illustrates Saladoid monkey imagery from Grenada, Tobago, and Barbados and states that depictions of primates are rare in indigenous material culture and are mainly concentrated in the southern part of the Lesser Antilles. Waldron (2009, 2011) illustrates a Saladoid adorno (modeled decoration attached to a pot) (250 BCE–650 CE) from Mount Irvine on the island of Tobago that resembles a primate. It has a primate-like prognathic face, lateral nostrils, rear-positioned ears, and frontal mask (Fig. 3.5d). This adorno (2.5 × 5 cm) is now in the Tobago Museum and is similar to examples found in the Orinoco River basin of Venezuela (e.g. Osgood and Howard, 1943; Sanoja, 1979; Urbani and Rodríguez, 2021; see also Waldron, 2016, fig. 4.11 of Barranoid/Saladoid adorno from Saladero, Venezuela). A Saladoid vessel fragment (5 × 9 cm) from the Chancery Lane site on Barbados held in the Florida Museum of Natural History in Gainesville also merits attention (Fig. 3.5e). Its upper part bears resemblance to a howler monkey (Waldron, 2016: 73–74, fig. 4.12), although the pointy nose and rounded facial area of this adorno may instead indicate a human being. The geometric decoration on the lower part of this same vessel shows a possible necklace and may be related to the ontological liminality between humans and monkeys so visible in the late precolonial Valencioid imagery and purported burials of monkeys with necklaces from the Lake Valencia Basin in north-central Venezuela. Despite this evidence, Waldron is cautious about identifying primates in indigenous imagery considering that “several possible monkey

Figure 3.5 (cont.) by J. Ulloa (a), B. Urbani (b, f), Pitt Rivers Museum, Oxford University (c), Florida Museum of Natural History (e), and T. A. Wake (g). Made by B. Urbani based on image from Waldron (2011: 6, fig. 15) (d).

adornos were ambiguous enough to be anthropomorphous, especially when accounting for Saladoid stylizations” (Waldron, 2016: 73).

A monkey-like ceramic vessel exhibited at the Museo de Antropología e Historia de Maracay, Aragua state, Venezuela is allegedly from the north-central Venezuelan town of Ocumare de la Costa in Aragua State (Sýkora, 2006; B. Urbani, pers. obs.) (Fig. 3.5f). The Ocumaroid series spans from 250 CE to 1500 CE (Antczak and Antczak, 1999). The globular vessel has a primate-like facial mask and a rounded tail. Populations of *Cebus brunneus*, *Alouatta arctoidea*, and *Ateles hybridus* currently live near these archaeological sites. In Bocas del Toro, Panama, a monkey is depicted on the exterior surface of a large ceramic rimsherd from Sitio Drago (Fig. 3.5g). The Bocas brushed-pinched ceramic complex consists primarily of small to large necked globular vessels with outflaring red-painted rims. The external rims of these vessels are often decorated with applied figures representing a variety of marine and terrestrial vertebrates and invertebrates (Linares and White, 1980; Wake, n.d.). The illustrated sherd represents the rear half of a monkey hanging below a tree branch by its tail. External sexual organs are depicted in a way that suggests the monkey could represent a female spider monkey. Four monkeys are found in the region (*Alouatta palliata*, *Aotus zonalis*, *Ateles geoffroyi*, and *Cebus capucinus*), with two, mantled howlers and white-faced capuchins, currently found on Isla Colón. In regard to material culture from coastal and island Mayan sites (e.g. Tulum, San Gervasio), there are no known primatomorphic representations to our knowledge. Based on the information available, the objects illustrated in Fig. 3.5 represent the only confirmed depictions of primates on portable objects in the circum-Caribbean region.

There are alleged images of primates in circum-Caribbean material culture that can be traced back for over more than a century. They are reported here as relevant to historical backgrounds of archaeoprimatological interest for this region. For example, pottery adornos in Cuban Taíno sites that were originally described as resembling primates are currently redescribed as bats and owls (Jiménez-Vásquez, 2015). Poey (1855a: 12) indicated that a figurine found at the site of Junco, in Barbacoa, eastern Cuba (Fig. 3.6a):

represents an idol in squatting position on its hindquarters. The front legs are crossed over the abdominal region, without the sculpture making any indication of the genital organs. Behind the head is an eminence like rings without any visible perforation. The idol's features are rude, but his expression is more mocking than fierce. In the position of the front legs, there is a certain lubricity that is peculiar to the monkeys of Guinea, and especially to the *papion* (genus *cynocephalus* [sic]; or dog's head); position that perhaps was imitated of intent. (2). I owe this indication to my father, Mr. Felipe Poey, director of the Natural History Museum of Havana. . . (2) The black girdle of the visage depicts the face of Walton's monkey similar *simia apella* than the capuchin [in Buffonian terms]. Amans are very close species. (Cuvier, Rein An I.: 102.)

The previous report was later complemented with this comment: “My father, who is perhaps the person who has done more extensive research than any other naturalist in Cuba, nor me, we have not been able to have the slightest news of the existence

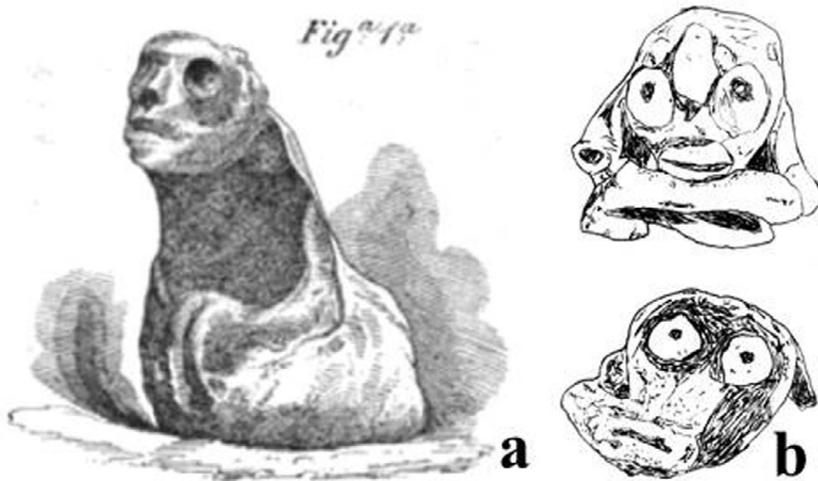


Figure 3.6 Portable objects with alleged primate depictions from archaeological sites of the circum-Caribbean region. See text for localities, descriptions, and contexts. Images not to scale. (From Poey (1855a: Lám. 3) (a), made by B. Urbani based on image from Sýkora (2006: 789, fig. 20–223; 806, fig. 20–261–A.) (b).)

of monkeys, or of the finding of a [monkey] skeleton on the Island” (Poey, 1855b: 26). A current evaluation of the image cited by Poey (Fig. 3.6a) shows that it does not resemble a primate but this was likely the first attempt to interpret a potential depiction of a primate in the pre-Hispanic Caribbean material culture. Later, Harrington (1921) also indicated the inclusion of monkey heads as part of Cuban Taíno pottery adornos. In sum, in Cuba, there is no material culture that depicts monkeys (see also Jiménez-Vásquez, 2015) and even the fact that some Taíno adornos found in the eastern Cuban fields of Maisí are locally named “monitos [little monkeys]” (Rivero de la Calle and Borroto-Páez, 2012: 365).

By 1869, a set of pre-Hispanic adornos and vessel handles collected in Puerto Rico by the former US Consul in San Juan, George C. Latimer, were later deposited and cataloged as “monkey faces” at the US National Museum of Natural History (USNM-Smithsonian Institution, accession numbers: A17123–0 and A17124–0). Latimer’s collection was used by the American archaeologist Jesse W. Fewkes (1850–1930) for writing a pioneering book on Puerto Rican archaeology (Alegría, 1996). In this work, Fewkes (1907: plates LXXIV and LXXV) presented images of archaeological sherds similar to the ones placed in the Smithsonian Institution by Latimer, but indicated that they were found in Santo Domingo, Dominican Republic. Fewkes (1907: 181) anticipated the possible misidentification of the “clay heads” and wrote when referring to the images reproduced in both plates that “the general cast of many of the specimens suggests monkey heads, but this resemblance is unintentional, being due rather to the method of working clay into faces adopted by the

ancient potters. It is impossible to identify the great majority of these figurines, and they may be regarded as simply fantastic forms used for decorative purposes, having no further import or meaning.” After a closer examination of a pair of photographs of the ceramic assemblage deposited in the Smithsonian Institution (online images of USNHM A17123-0 and A17124-0) as well as the two plates published by Fewkes (1907), these pieces do not show attributes to describe them as primate depictions. In addition, Fewkes (1907: plate XLIa, a’) presented a Taino three-cornered stone with a face that he identified as a monkey. Unfortunately the image lack quality for proper identification; however, the profile of the object shows a very prognathic facial area that differs from that of a primate (e.g. Fig. 3.5a, b).

Similarly, in the north-central Venezuelan coastal site of Palmasola, Sýkora (2006) reported the existence of pottery attachments that to him resemble monkeys (Fig. 3.6b); nevertheless, after closer examination, they do not present diagnostic attributes that allow us to identify them as primates. Recently, Nortje Wauben (2018: 90, fig. 25) initially considered that certain ceramic adornos from Dominican Republic (El Flaco site, 13th–15th Century) may depict monkeys but finally identified them as “human faces [depicted] with exaggerated mouths.” We concur with her identification of them as non-monkey faces.

3.3.2 Alleged Primate Depictions on Rock Art

Systematic study of rock art depicting primates on Caribbean coasts and islands is lacking. This is most likely due to the fact that no primate images are mentioned in the major reviews on rock art research from Trinidad, the Lesser Antilles, and the Virgin Islands (Dubelaar, 1995), the islands of Aruba, Curacao, and Bonaire (Wagenaar-Hummelinck, 1991), Cuba (Nuñez-Jiménez, 1975), the Dominican Republic (Atilés-Bidó, n.d.; DuVall 2011; Pagán-Perdomo, 1978), Puerto Rico (Dubelaar et al., 1999), and Venezuela (e.g. Valencia and Sujo-Volsky, 1987). Hayward et al. (2009) do not mention monkey or monkey-like images among several animals depicted in insular Caribbean rock art. Neither Pérez de Barradas (1941) nor Costa et al. (2015) report indigenous pictographs of primates from the Caribbean coast of Colombia or Central America. In the central mountain range that reaches the Venezuelan Caribbean coast, there is a large rock art panel called Piedra de los Indios depicting petroglyphs of primate-like animals in San Esteban National Park in the state of Carabobo, Venezuela (Valencia and Sujo-Volsky, 1987). In the same mountain range at the site of Camaticaral in the state of Vargas, there are also animal depictions similar to primates (Rojas and Thanyi, 1992; see also Antczak and Antczak, 2007); however, some of these depictions have dots on their bodies that might indicate that they are instead felines.

Although images of primates are generally lacking in the Greater Antilles, there are three cases that deserve further examination. Cueva Número 4 de Borbón at El Pomier, San Cristóbal Province in the Dominican Republic (Atilés-Bidó, n.d.), displays a panel that shows animals with primate-like prehensile tails on what is likely a hunter’s carrying rod (Fig. 3.7a). This depiction is associated with a person playing a

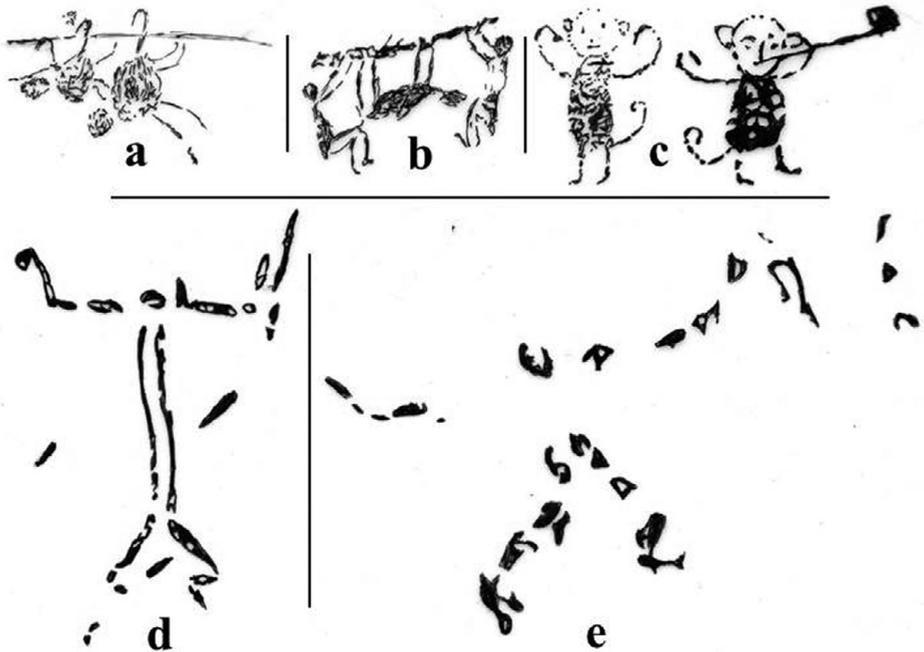


Figure 3.7 Depictions of alleged primates from rock art sites of the circum-Caribbean region. See text for localities, descriptions, and contexts. Images not to scale. Made by B. Urbani based on images from Rivero de la Calle and Borroto-Páez (2012: 364, fig. 4) (a), Atilés-Bidó (n.d) (b), Nuñez-Jiménez (1973: 104, fig. 2) (c), Arrendondo and Varona (1983: 10, fig. 1) (d), Jiménez-Vásquez (2015: 36, fig. 4) (e).

flute. Similar animals, without the tails, are present in the Dominican Cueva Hoyo de Sanabe (Pagán-Perdomo, 1978; Rivero de la Calle and Borroto-Páez, 2012). Apart from hutias, this depiction has been also described as edentates or even Hispaniolan primates on a branch (L. T. Suárez, pers. comm. in Rivero de la Calle and Borroto-Páez, 2012) (Fig. 3.7b). Similarly, in Cuba, Nuñez-Jiménez (1973, 1975) reports animals with primate-like prehensile tails related to “totemic” events depicted in the Cueva de Matías in the Sierra de Cubitas, Camaguey Province (Fig. 3.7c). Nuñez-Jiménez (1973, 1975) provides a more parsimonious suggestion of what might have been depicted: Desmarest’s hutias (*Capromys pilorides*). In the Dominican Republic, likewise, the animals might be Hispaniolan hutias (*Plagiodontia aedium*). In both cases, according to the authors, these depictions are possibly related to ritual events.

In Cuba, there has been controversy over a charcoal “archaic” rock painting of an alleged large primate (Jiménez-Vásquez, 2015) (Fig. 3.7d, e). This image is 10 cm height and was discovered in 1981 in Cueva Ciclón (pictography # 1) of the Gato Jíbaro Cavern in the Bellamar Karst System in the Matanzas Province of Cuba (Jiménez-Vásquez, 2015; Rivero de la Calle and Borroto-Páez, 2012). As reviewed by Jiménez-Vásquez (2015), a reconstruction of this image was published by

Pérez-Orozco (1982) as shown in Fig. 3.7d. Arredondo and Varona (1983) imply that it depicts an ateline primate, suggesting its former presence in Cuba. In words of Arredondo and Varona (1983: 10), it is “a true spider monkey (*Ateles*). With its long arms, the small sunken head within the shoulders, in the characteristic position of these platyrrhines as they bipedally move on the ground. . . [made by] a pre-Agro-Columbian culture of Cuba.” Jiménez-Vásquez (2015) requested the original photograph from Pérez-Orozco in order to reexamine the original source (Fig. 3.7e). It was found that the photograph was taken from below, but even so, it is strikingly different than the published version in Pérez-Orozco (1982) and Arredondo and Varona (1983) (Fig. 3.7d). As observed in Fig. 3.7e, the depiction more likely represents a human being. Bruner and Cucina (2005), after republishing Fig. 3.7d, indicated that it represents a pre-Columbian spider monkey even though only Miocene-Pleistocene primates related to *Alouatta* (*Paralouatta*) are found in the Cuban fossil record. In sum, to our knowledge, no confirmed rock art depictions of primates are known from the circum-Caribbean region.

3.4 Early Historical Ethnoprimatology of the Circum-Caribbean Region

Herein, we explore fifteen to seventeen century European chronicles providing ethnoprimatological information of archaeoprimatological interest for the Caribbean (see Urbani 1999, 2011, 2015, 2016b; Urbani and Rodríguez, 2021). Hernando Colón (1488–1539), son of the Genovese admiral Christopher Columbus, in a posthumous text, known by 1571, presented the first account of a monkey seen on his father’s landing in Trinidad. The event occurred at present-day Galeota Point, Trinidad, on August 1st, 1498, four days before the first European contact with the American *terra firme* [i.e. Peninsula of Paria, northeastern Venezuela]. This is the first ethnoprimatological record from the Neotropics (Urbani, 2011, 2015). The text reads: “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 [present-day Paria Peninsula, Venezuela]. . .” (H. Colón, 1932: 132, translation from Urbani [2011]). These bones of monkeys found along the beach may have been deposited by indigenous peoples. Urbani (2011, 2015) identified these primates as Trinidadian *Cebus albifrons trinitatis* or *Alouatta macconelli*; most likely the second, as the term *gatos paúles* was normally used to designate howler monkeys during that period. In 1595, these Trinidadian monkeys were reported to be called *howa* by the indigenous peoples (Dudley, 1899; Urbani, 2004). During his fourth voyage (1502–1504), Columbus reported primates along the Caribbean coast of Central America, likely in Nicaragua or Honduras (Urbani, 1999, 2016b). He wrote that, “A crossbowman hunted an animal, which resembled a cat, except that it is much larger and has the face of a man; it has an arrow between the breasts and the tail, and because he was fierce, he cut off an arm and a leg. . . threw the tail through the snout and he tied it very tightly and with his remaining hand he slashed it down the top like an enemy” (Colón, 1984: 326). It is not clear if this account refers to a hunter of Spaniard or

Amerindian origin. If the latter, this represents active primate hunting by indigenous peoples in the Neotropics; however, he was most likely a Spaniard. By 1504, the assistant to the Venetian ambassador to the Spanish Crown, Angelo Trevisan, wrote the narrative of the expedition of Pedro Alonso-Niño (1469–1502) in 1499. Alonso-Niño indicated that while “entering the island [refers to *terra firme* = Peninsula of 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” Trevisan (1989: 151, translation from Urbani [2011]). This report relates an unusual account of the indirect interaction of indigenous peoples with likely howler monkeys while sharing the same forest.

By 1516, the Piedmontese chronicler Peter Martyr d’Anghiera (1457–1526) recorded that in the site of Cariari in the western Venezuelan coast “one of our archers shot [a monkey] with an arrow” (Anglería, 1965: 321–322). Once again, unfortunately, it is not possible to know if the hunter was a Spaniard or an Amerindian. Later at the western Venezuelan coast locality of Chichiriviche, he wrote: “That land was raised by wild cats [monkeys]: the mother, carrying them hugging, snakes through the trees and must be wounded to take the offspring. They keep these animals for their entertainment, like us the *cercopitecos* or monkeys, from which they differ greatly, according to the friars putting ties to the banks of the rivers” (Anglería, 1965: 693). The way the text is written appears to indicate that indigenous peoples not only hunted monkeys but also kept them as ‘pets’. These primates possibly are *A. arctoidea* and/or *C. olivaceus* (Urbani, 2011, 2015). When discussing the “customs” of the peoples of Cumaná, the Spanish historian Francisco López de Gómara (1511–1566) refers to howler monkeys living near that town along the coast of northeastern Venezuela in 1552. He said that “[they] flee the hunters, take the arrow off and throw it gracefully at the one who threw it” (López de Gómara, 1979: 122). This information is later replicated in 1601 by the Spanish historian Antonio de Herrera y Tordesillas (1601: 160–161) and the friar Pedro Simón (1963: 109) in 1627. These primates likely are *A. arctoidea* and/or *Cebus brunneus* (Urbani, 2015, 2016b). The Milanese traveler Girolamo Benzoni (1519 to 1566–1572?) reported by 1561 that the Amerindians eat monkeys in the Paria region of Venezuela (Benzoni, 1989).

During the seventeenth century two Spanish chronicles from the northeastern Venezuelan coast refer to the interaction of indigenous peoples and primates. Between 1672–1708, the Spanish friar Matias Ruiz Blanco (1643–1708) reported that in the coastal town of Píritu, local “indians hunt them, and so they take them. There is a species that are large, very vermilion and have beards in the manner of males. These are what the Indians eat. They go to hunt them and bring their body parts roasted” (Ruiz Blanco, 1965: 24–25). In that region, Ruiz-Blanco also indicated that the *piaches* (shamans) of the Cumanagoto people “were recognized by certain aspects [among others]. . . they bring a sitting idol in the form of a monkey, which they say is their God” (Ruiz Blanco, 1965: 41). These primates are likely *A. arctoidea*. Later in 1786–1789, the Spanish-Ecuadorian historian Antonio de Alcedo y Bejarano

(1735–1812) reported from the same coastal town and the Venezuela Guayana that “indians prefer the meat [of howlers] rather than other animals because they say it is very delicate” (Alcedo, 1988: 152). The previous Spanish chronicles ethnoprimateologically stand as early sources on the use of howlers as ‘pets’ and as hunted game by the indigenous societies of the northern South American coastal Caribbean.

3.5 Discussion and Conclusions

The relationship between humans and primates in the Neotropics is complex, deeply-rooted in time, and contextually bounded (see Urbani and Cormier, 2015). After examining the osteological evidence of primates from the circum-Caribbean, different patterns can be observed. In most archaeological sites, mainly those from Trinidad, the Venezuelan coast and islands, and Panama, primates appeared to be associated with food related discard contexts. In many of these sites, juvenile or young adult individuals are identified, indicating the possible selection of them by age (Drago, Wanápa. Palmasola, El Cuartel, Trinidadian sites), or being the by-product of hunting adult females (see Urbani, 2005). While few, some of these monkey specimens present direct evidence of processing in the form of cut marks on the bones (Drago, St. Catherine, and Palmasola). The ethnohistorical record also supports the contention that primates in general and howler monkeys in particular, were hunted in the region. This pattern appears to be similar to that observed in lowland South America where howlers figure prominently in subsistence practices of contemporary indigenous societies (Urbani, 2005). Trinidad is interesting because multiple sites on a single large island are reported to have primates as hunted game (including modified bones from Mayaro and St. Catherine sites). These also align with the conspicuous first historical record of likely human-discarded remains of howler monkeys on the island. The data presented here illustrate that howler monkeys were being used in consecutive precolonial periods through the colonial Mission period. A prevalence of cranial remains similar to that seen at the Mayo site in Trinidad is also reported in the El Guácharo cave, Dos Mosquises, and the El Cuartel sites in Venezuela (Urbani and Rodríguez, 2021; Antczak and Antczak, 2006; Urbani and Gil, 2001; Vargas-Arenas, 1979), and the Moraes site in Brazil (Plens, 2010). Plens (2010) posits that this pattern may be due to the increased taphonomic survivability of teeth. This pattern could also reflect a preference for keeping certain skeletal elements involved in particular cultural practices such as cranial parts of the monkeys. In Trinidad, the modification of bones at St. Catherine might imply a special significance of monkeys to the site’s inhabitants, e.g. aesthetic or symbolic value, or both. In the vast canon of stories of South American indigenous peoples, monkeys are often presented as tricksters that act in ways inverse to those of humans, but they are often the founders of ‘humanity’ and ease communication with ‘ancestors’ (Paulsen, 2019; Waldron, 2016). On the other hand, at Palmasola, capuchins appeared to be the preferred primates. It is also possible that the scarcity of primate material at this site, according to Sýkora (2006), might be related to possible food taboos, although he also indicated that hunting of primates may have increased, as capuchins are currently

abundant in the region (assuming similar abundances). Indigenous narratives also inform us that certain species of monkeys are considered huntable game with edible flesh while other monkeys (mainly those with nocturnal habits) are perceived as nonedible spirits, although the latter is not frequent (Paulsen, 2019). The presence of spider monkey specimens at Drago, Panama, may indicate the past local presence of this species on Isla Colón, or possibly importation from the mainland as howlers represent the only ateline species currently present on the island.

In Aruba, the Isla site burial reflects a possible mother–child relationship, while the capuchin monkey could have been a ‘pet’, a (funerary) gift, a trade item, or maybe an animal with symbolic value to the buried individuals. Similarly, the monkey from Bonaire, was possibly a ‘pet.’ Other than this sample, no material culture depicting a monkey, or any artifact made of monkey bone has been found in Aruba. It is relevant here to point out that an early chronicle from Chichiriviche, part of the Venezuelan coast fronting the Dutch Antilles, recorded the use of primates as ‘pets’ by indigenous people (see, chronicler P. M. d’Anghiera in Section 3.4). At Dos Mosquises, the monkey specimen is associated with a food discard (domestic trash) context, although the skull might represent a ‘hunting trophy’ or may have been an offering. The presence of primates on Bonaire, Aruba, and, perhaps, at Dos Mosquises, may imply the circulation of live animals from mainland central Venezuelan coasts. This pattern of zooarchaeological evidence supports the interconnection of these islands between 25 km and 135 km from *terra firme*. Monkeys as ‘pets’ and laden with symbolic value may have been transported by the Dabajuroid to Aruba and Bonaire and by Valencioid peoples to Dos Mosquises. It is noteworthy that Giovas (2018) reported the presence of nonnative deer species from South America in archaeological sites of the Lesser Antilles between 500 BCE and 1500 CE (see also Newsom and Wing, 2004). Giovas et al. (2011) reported the exchange of exotic fauna such as peccaries, opossums, agoutis, and armadillos from the continent to Carriacou, a relatively close Lesser Antillean island.

The material from Bonaire, Aruba, and Dos Mosquises (the first two of possible Arawak affiliation, and the latter of Carib linguistic association) represent a continuum of tradition related to the liminal interaction of primates and humans in northern South America. Marcano (1971 [1889]) reported monkey remains recovered at a site on the eastern shore of the Lake of Valencia. Alfredo Jahn excavated monkey remains with a shell necklace in a ceramic urn burial in the same region (Falci et al., 2017; Steinen, 1904). In 1943 Osgood (1943) reported a mound excavated at the site of Tocorón in the early 1930s that yielded a burial of a child or a monkey with shell beads. At nearby Los Cerritos, Peñalver (1981) reported that excavated mounds yielded several burials that include remains of monkeys and associated offerings. This suggests that monkeys were of particular symbolic relevance among the late Caribs of north-central Venezuela as they are repeatedly associated with urn burials and may represent ‘pets.’ The virtual absence of monkey bones in nonburial contexts in north-central Venezuela, despite their remarkable natural abundance in the region (see Antczak, 1999), suggests that a taboo might have been imposed on hunting them. Unfortunately, apart from the insular Dos Mosquises site, the monkey specimens recovered from these Carib-related sites on the northern Venezuelan mainland

could not be relocated and were not reexamined. In the same Valencia region, a worked cranial specimen recovered from the Barranoid site of La Culebra was relocated (Urbani and Rodríguez, 2021). This site represents an Arawakan occupation of Orinocan traders that reached the area around 200–c. 800 CE (see chronology in Antczak and Antczak, 1999), previous to a second later expansion of Caribs from the same lowland South American region (Antczak et al., 2017a).

The above-referenced osteological material signals the ritual value of primates among the Arawakans of northern Venezuela, and may suggest that ultimately, this tradition may have an Orinocan origin associated with spread of Barranoid and Saladoid pottery makers (Urbani and Rodríguez, 2021). The sites of El Cuartel and Puerto Santo are Saladoid settlements and this association continues in the region from the time from the first Arawakan occupation to the more recent occupation by Carib-speaking peoples (Urbani and Rodríguez, 2021). In the case of Aruba and Bonaire, this implies an actual connection and influence between Dabajuroid pottery makers of Arawak origin, and the Valencioid people of Carib origin, as has been suggested by a number of authors (Antczak and Antczak, 2006; Bongers, 1963; Boomert, 2003; Dijkhoff, 1997; Dijkhoff and Linville, 2004; Sterks, 1982; Van Heekeren, 1963). Finally, it worth mentioning that the osteological remains of primates are geographically located along the most meridional part of the circum-Caribbean region.

The report of a simian foamy virus in human coprolites from the island of Vieques (Puerto Rico) may indicate contact of peoples of Mesoamerica or northern South America with native populations of cebids and atelids suggesting that long-distance trade may have been occurring between these *terra firme* regions and the island of Vieques in the Greater Antilles. This is not entirely unlikely when considering that confirmed long-distance early maritime connections related to the exchange of variscite existed between the Tairona of northeastern Colombia, and the Los Roques archipelago just off the north-central Venezuelan coast (Acevedo et al., 2016). Even more, pre-Hispanic jadeite artifacts recovered in St. Eustatius and Antigua and dated to ~230–890 CE– the period when this contact occurred with cebids or atelids – appear to confirm a circum-Caribbean exchange network between the Lesser Antilles and present-day Guatemala, Costa Rica, Panama, and Colombia (García-Casco et al., 2013). The green stones and monkeys may represent highly esteemed commodities to indigenous peoples of the circum-Caribbean region.

Compared with closer capuchin populations in northern South America, the very disjunct distribution of capuchin monkeys present in two Caribbean islands (Margarita and Trinidad) appear to suggest the action of humans in the past movement of living individuals of these primate taxa. Regarding the Margarita capuchin monkeys, if the hypothesis of Linares (1998) is correct, then, these primates are living examples of pre-Hispanic mobility of monkeys by indigenous peoples from northern South America to a Caribbean island. Thus, the concentration of archaeological sites with primate remains related to Arawakan peoples (Saladoids) on the Venezuelan coast facing Margarita Island and on the closer island of Trinidad, as reported in this chapter, appears to support this contention. In addition, there are Saladoid sites in the Guianas and the Upper Orinoco that overlap the distribution of the closer *terra firme* populations of tufted

capuchin monkeys (*Sapajus apella*). For instance, the Saladoid site of Wonotobo Fall in western Surinam (Boomert, 1983) is on the western limit of tufted capuchins in the Guianas (Lehman, 2006), and Arawakan-related sites are found in the Upper Orinoco River (Zucchi, 1999), where the other closer continental population of *Sapajus apella* is distributed (Linares, 1998; Urbani and Portillo-Quintero, 2018). Today, in this Venezuelan region, peoples of Arawakan linguistic affiliation recognize a tufted capuchin taxon (B. Urbani, pers. obs.). Even more, the connection of the Orinoco sites with Barrancoid/Saladoid primatomorphic depictions with northern Venezuelan Saladoid/Barrancoid sites with primate remains (Urbani and Rodríguez, 2021) seems to reinforce the argument that, if of pre-Hispanic origin, the monkeys of Margarita were not only possibly transported by indigenous peoples, but also likely by Arawakans. Referring to Trinidadian white-fronted capuchin monkeys, Hershkovitz (1949) proposed that the nearest inland populations of white-fronted capuchin monkeys are in the Venezuelan Orinoquia and around Maracaibo Lake. He also proposed that the capuchins of Trinidad might have been transported to this island by humans. If this contention is correct and likewise occurred during pre-Hispanic times in a Trinidadian territory occupied by Saladoid/Barrancoid porters that interacted with monkeys (see Section 3.2.1.8), then the cultural connection with Arawakans also appears more plausible. The nearest region with *albifrons* capuchins is located in the Middle Orinoco River basin (Linares, 1998; Urbani and Portillo-Quintero, 2018), right where one of the most dynamic precolonial exchange and trading centers of multicultural dimension (Arawakan [Saladoid, Barrancoid] and Cariban [Valloid, Arauquinoid, related to coastal Valencioid]) existed in northern lowland South America: the Átures Rapids (e.g. Antczak et al., 2017a; Gassón, 2002; Lozada-Mendieta et al., 2016). Even the Middle Orinoco region is the most conceivable source area for the Trinidadian capuchin taxon, if the alternative of northwestern Venezuela is also considered: there peoples of Arawakan linguistic affiliation (e.g. see Oliver, 1989) overlapped the distributional range of a northern-most *albifrons* form (*Cebus leucocephalus*) (Boubli et al. 2021).

The portable artifacts that depict primates recovered from Taíno sites on two localities on Hispaniola (the Dominican Republic) is striking evidence considering the great distance between those islands and continental primate populations. However, there is confirmed evidence on the presence of Taíno artifacts – and possibly Taíno traders – near the coast of northern South America as found in archaeological surveys on the island of Carriacou, in present-day Grenadian territory (Fitzpatrick et al., 2014). The identification of a hair sample of the Turin Taíno cotton *cemi* requires further attention. Unfortunately, the hair used for comparison is from *Saimiri* spp., a primate taxon with a natural distribution distant from the Caribbean, compared to other cebid genera such as *Cebus* spp. and *Sapajus* spp. (Mittermeier et al., 2012). Other primate species that might be used for comparanda include night monkeys (*Aotus zonalis*), spider monkeys (*Ateles geoffroyi*, *A. fusciceps*, *A. hybridus*), howler monkeys (*Alouatta palliata*, *A. pigra*, *A. arctoidea*, *A. macconnelli*), and tamarins (*Saguinus oedipus*, *S. geoffroyi*). If the primate hair from the *cemi* of Turin is actually from a squirrel monkey, then it might indicate Taíno exchange with the Guianas, the Middle and Upper Orinoco in present-day Colombia and Venezuela, or perhaps even the Pacific coast of Panama and

Costa Rica where populations of *Saimiri oerstedii* exist. Thus, it is relevant to point out that not only imageries about primates, not depicted in the Caribbean rock art, but also primates or primate parts arrived in the Dominican Republic.

In sum, interaction between native Caribbean human populations and primates has existed since the Archaic Age (e.g. Steadman and Stokes, 2002). In addition, extinct Antillean primates species, such as *Antillothrix bernensis* in the Hispaniola or *Xenothrix mcgregori* in Jamaica, may have also coexisted with indigenous peoples who contributed to their extinction in late Holocene times (Cooke et al. 2017; Gutierrez-Calvache and Jaimez-Salgado, 2006, 2007; MacPhee and Flemming, 1999; MacPhee and Rivero de la Calle, 1996). It was not until the Ceramic Age (300–1500 CE) that diverse sites along the southern circum-Caribbean region show ample osteological evidence as well as material culture indicating deep-rooted connections between indigenous peoples and primates. Early historical records appear to confirm an extended, intricate, and multipurpose interaction between humans and primates. With the development of European maritime trade routes in the Atlantic world, primates from Brazil (*Callithrix* spp.) and Africa (*Chlorocebus aethiops sabaesus* and *Cercopithecus mona*) reached the Caribbean region in the sixteenth and seventeenth centuries (Dore, 2017; Glenn, 1998; Sade and Hildrech, 1965; McGuire, 1974; Urbani, 2019; B. Urbani, pers. obs.) and probably interacted with local indigenous peoples as well. Additionally, for instance, Kemp et al. (2020: 6–7) recently suggested “that the introduction of the yellow fever virus and its mosquito vector, *Anopheles aegypti* – directly tied to the slave trade – shaped the political fortunes of colonial powers in the Caribbean. . . As monkeys can serve as natural reservoirs for this virus, the Late Holocene extinction of native monkeys from the Greater Antillean islands might have lessened potential local impacts, whereas the introduction of feral monkey populations across the Lesser Antilles may have exacerbated them.” The findings presented in this chapter serve not only as a background for future research into human-primate interactions in the circum-Caribbean region but also incentivize comparative studies of interactions between humans and primates on wider spatial scales.

Note Added in Proof

Due to the COVID-19 pandemic, the primate specimen from the Wanápa Site (Island of Bonaire) held at the Florida Museum of Natural History at the University of Florida

was unavailable for examination. The absence of this specimen’s description does not modify the conclusions of this chapter.

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