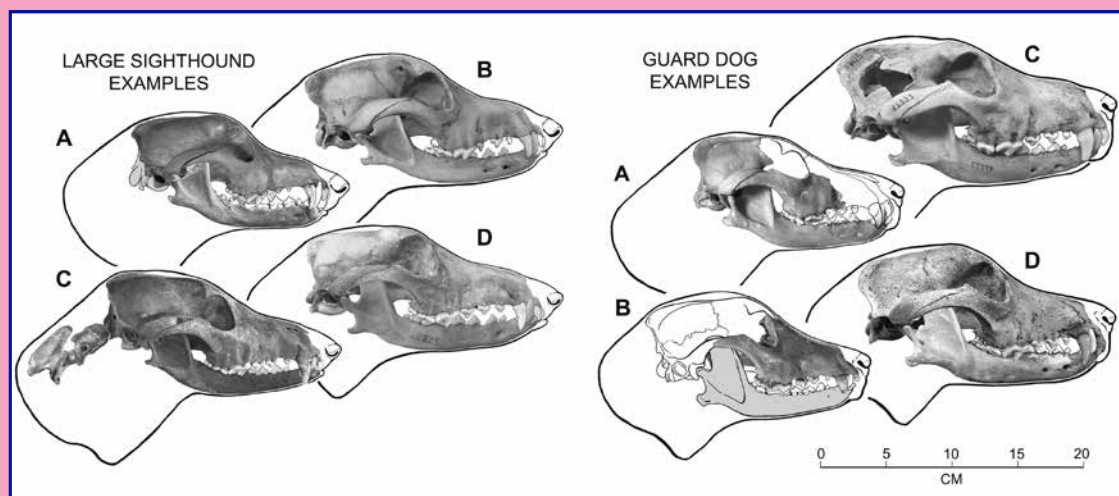


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Humans and animals in the Postclassic Cuchumatanes: the archaeological fauna from Chiantla Viejo (Huehuetenango, Guatemala)

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ABSTRACT: Recent excavations at the highland site of Chiantla Viejo (Huehuetenango Department, Guatemala) were conducted to refine the site stratigraphy and understand population movements during the late Postclassic and early Contact era (AD 1250-1550). Excavations recovered animal remains from these transitional contexts. This analysis represents one of the first zooarchaeological studies of a faunal assemblage in the Guatemalan highlands at the end of the pre-Hispanic period and into Spanish contact. The results highlight the changes and also the continuities experienced by the residents of this region during the early Colonial period: the persistence of long-distance exchange networks, the continuation of wild game hunting, and the early introduction of Eurasian domesticates.

KEYWORDS: GUATEMALA HIGHLANDS, MAYA ZOOARCHAEOLOGY, POSTCLASSIC PERIOD, CONTACT ERA

RESUMEN: Excavaciones recientes en el yacimiento de las Tierras Altas de Chiantla Viejo (Departamento de Huehuetenango, Guatemala) fueron acometidas para afinar la estratigrafía del sitio y valorar los movimientos poblacionales durante el Postclásico Tardío y el inicio de la Era de Contacto (1250-1550 AD). Las excavaciones recuperaron restos faunísticos de estos contextos de transición. Este estudio constituye uno de los primeros análisis zooarqueológicos de una colección faunística en las Tierras Altas Guatemaltecas a finales del periodo Prehispánico y ya entrada la fase de contacto con los españoles. Los resultados enfatizan tanto los cambios como las continuidades que experimentaron los residentes de esta región durante el temprano periodo colonial. Entre éstos, incluimos la persistencia de redes de contacto de larga distancia así como la caza pero también la temprana introducción de las especies domésticas eurasiáticas.

PALABRAS CLAVE: TIERRAS ALTAS GUATEMALTECAS, ZOOARQUEOLOGÍA MAYA, PERIODO POSTCLÁSICO, ERA DE CONTACTO

INTRODUCTION

Chiantla Viejo is a small archaeological site in the western highlands of Guatemala with archaeological and historical evidence of intermittent occupation and abandonment during the sixteenth century as a result of the Spanish conquest of the Maya area. More recently (19th-20th century), the site was used as a cemetery for the surrounding communities. A collection of 199 faunal remains was recovered during the archaeological excavations at the site in 2017. Despite the small sample size, this assemblage constitutes an important source of zooarchaeological data for this region of the western Guatemalan highlands during the Postclassic and the Contact periods (AD 1250-1550). Zooarchaeological datasets from Maya highland sites are rare, particularly for the Postclassic era. This deficiency of data is related to a lack of faunal analysts working in the region, which leads to variable recovery of the faunal remains from these sites. To date, the largest faunal assemblages studied for this period are located in the northern part of the Maya area, in the tropical zones of Yucatan (Emery, 1999; Masson & Peraza Lope, 2013). The analysis of the faunal assemblage from Chiantla Viejo permits us to highlight the changes and con-

tinuities in the animal use of the Maya during the Contact era. While some practices seem to have persisted after the Conquest such as the long distance trade of animal products or wild game hunting, the presence of remains of European domestic animals could represent one of the earliest pieces of evidence of imported livestock in the area. Given these elements and the existence of written documents describing the arrival of the Spaniards in this part of the highlands, this study also puts a particular emphasis on the analysis of the archaeological and historical context. This zooarchaeological study permits to highlight the changes and the continuities experienced by the highland Maya communities during this pivotal period: the relative stability of long-distance trade networks with other regions, the continuing reliance on wild game as main source of animal products, and the introduction of European livestock.

THE SITE OF CHIANTLA VIEJO

Chiantla Viejo is located on the southern slope of the Cuchumatán mountain range in the Mam-speaking region of western Guatemala (Figure 1). The



FIGURE 1

Location of Chiantla Viejo and other sites mentioned in the article (map: N. Delsol).

site was built on a high plateau surrounded by deep ravines except in the north, where a narrow land bridge connects the plateau to the sierra (Figure 2). The setting of Chiantla Viejo is typical of Late Postclassic sites (AD 1250-1550) in the western Guatemalan highlands, which were built in defensible locations due to the aggressive expansion of K'iche' Maya groups across the Maya highlands. The archaeological site now called Chiantla Viejo is the original location of the town of Chiantla. During the Conquest period, the town was contested between two Spanish conquistadors, Pedro de Alvarado and Juan de Espinar who were competing over the *encomienda* of Huehuetenango, one of the largest labor grants and sources of tribute in early colonial Guatemala (Agi Justicia, 1031; Kramer *et al.*, 1991; Kramer, 1994: 201-225; Lovell *et al.*, 2013: 129-148). This conflict led to a lawsuit which constitutes a major historical source on the events

of these early stages of the colonial period in the region. After burning and abandoning their towns in the mountains, the Mam relocated temporarily to the nearby city of Zaculeu, a major regional center in the valley of Huehuetenango. According to historical accounts, Zaculeu fell to the Spanish conquistadors during the rainy season of 1525, marking the beginning of the colonial era in this region of the Maya highlands. In the same year, Juan de Espinar was granted an *encomienda* at Huehuetenango and its subject towns. In 1530, a conflict between Pedro de Alvarado and Espinar prompted the burning of pre-Hispanic sites still occupied by the Mam after the Spanish invasion, causing a massive abandonment of the settlements, and the shifting of populations along the basin of the Selegua River and the valley of Huehuetenango. Testimonies recorded in the lawsuit claim that the burnt towns of Huehuetenango were later rebuilt and reoccupied when the

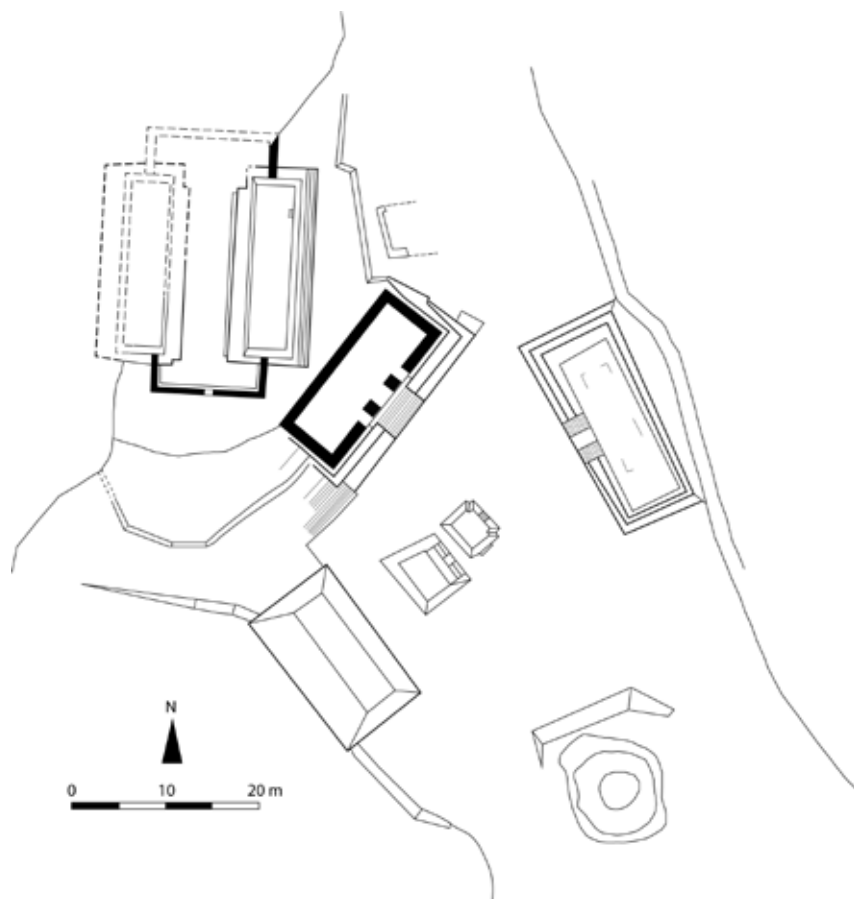


FIGURE 2

Map of Chiantla Viejo (cartography: C. Morales-Aguilar/ V. Castillo).

local population returned to their settlements in the mountains.

With historical records of burning, abandonment, and reoccupation of Chiantla, the purpose of the excavations conducted at the site was to discover archaeological evidence of the fire and the subsequent reconstruction. We assumed that, if in fact Chiantla Viejo was the town burnt in 1530, we could establish a secure chronological stratigraphic marker to compare earlier and later building activities at the site. The fieldwork campaign led in 2017 succeeded in finding a layer of burnt plaster in at least three different areas of the site indicating a synchronic burning event. This layer of burnt stucco likely corresponds to the fire of 1530. The excavations showed that specific spots in the site were set ablaze, including the platform in the center of the plaza, the lower part of stairways, and the room of Structure A-1. This tends to confirm some testimonies found in the litigation between Alvarado and Espinar and suggests that the fire was an intentional and well-planned event rather than a providential fire or the result of a cyclical or continued practice. By using this layer of burnt stucco, we identified a series of renovations that occurred after the fire, including re-plastering of the site's

structures and the intermittent building of central platforms in the plaza and the intentional hide of fire marks (Figure 3). This evidence supports the claims made by witnesses in the litigation regarding the reconstruction and reoccupation of the site after its burning.

Fills in both pre- and post-fire constructions proved to have mixed diagnostic ceramic sherds of the Early and Late Classic periods (AD 500 – 900), with just a small amount of Postclassic sherds (AD 900 – 1550). The builders of Chiantla Viejo likely brought in refuse from an earlier site nearby to add bulk to the building material. Thus, materials coming from the fills can be broadly assigned to pre- and post-AD 1530 contexts. The reuse of waste with earlier materials in the construction fills was documented by the excavators of Zaculeu, who were puzzled by the high frequency of Early and Late Classic sherds, especially from polished types, in the fills of Postclassic constructions (Woodbury & Trik, 1953: 145). The same pattern is observed at Chiantla Viejo and it might reflect a local regional construction practice during the Postclassic period. Unfortunately, the pre-Hispanic occupation of this region of the Maya highlands is not well known, but Zaculeu

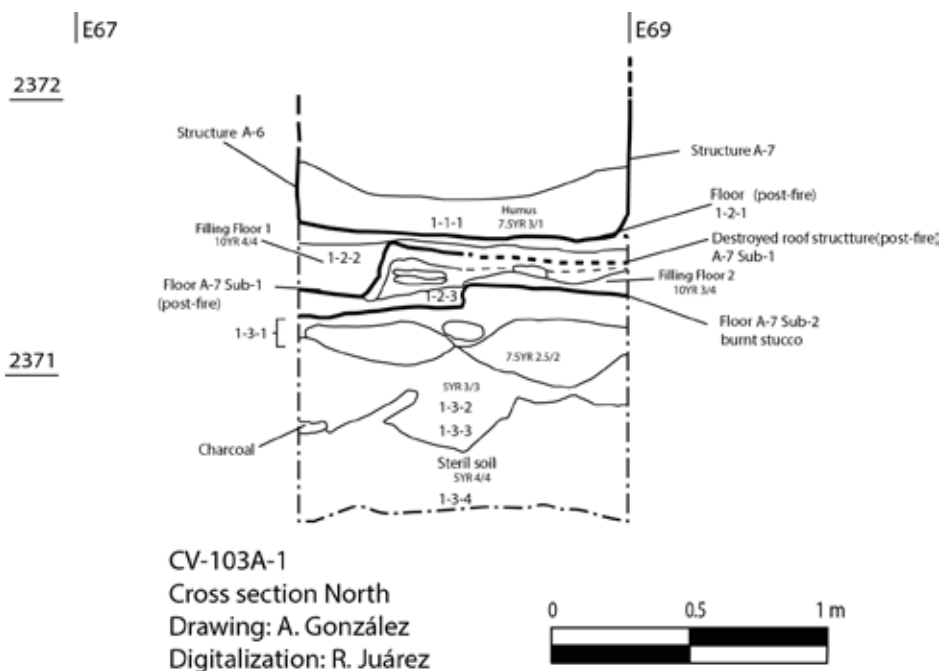


FIGURE 3

Cross-section of the test pit 103A where the three main stratigraphic contexts of the site are visible.

attests the relevance of this area during the Classic period. European ceramics from the sixteenth century were absent at Chiantla Viejo. This is not surprising, considering that that earlier refuse was the preferred material for bulking up the structures at the site both during the pre- and post-fire construction projects. Also, it is important to highlight that the occupation of the contact period at the site was short, only about two decades before it was finally abandoned. Glazed ceramics were found in the upper layers, but they were associated to later reoccupations of the site as a communal cemetery during the nineteenth and twentieth centuries.

ZOOARCHAEOLOGY IN THE MAYA HIGHLANDS

The study of animal remains from archaeological sites in the Maya area has been rapidly developing over the past decades (Emery, 2004, 2017; Götz, 2013). However, most of these studies have focused on assemblages from monumental sites in the lowlands regions to the north, while studies focused on sites in the Highlands are slowly increasing (Boileau *et al.*, 2020). The Preclassic city of Kaminaljuyú in the central highlands of Guatemala (Emery *et al.*, 2013) is among the few sites in the region for which zooarchaeological data has been published. Here, the faunal assemblages are numerically dominated by dog remains, particularly in the ceremonial and administrative center of the site and in higher status tombs. These data suggest that these animals were raised purposefully for ritual needs among the elite.

The site of Zaculeu, located in the western highlands of Guatemala, excavated in the mid-twentieth century, provided some of the first archaeological data on the Postclassic era in the region (Woodbury & Trik, 1953). This early archaeological expedition included an inventory of the faunal remains (in terms of Minimum Numbers of Individuals) unearthed in the ceremonial center that indicated the prevalence of local animals (deer, peccary) in the assemblages but did not provide a comprehensive analysis of the remains. Given this lack of data, the faunal assemblage of Chiantla Viejo constitutes a notable piece of evidence to understand the human-animal interactions in the Cuchumatanes Sierra during the transition from the Postclassic to the Contact era.

METHODS

Taxonomic quantification: NISP and MNI

The relative importance of the different taxa identified in the assemblage was quantified using two commonly used units, the Number of Identified Specimens (NISP) and the Minimum Number of Individuals (MNI). These units present analytical benefits and drawbacks of their own.

The NISP is the raw count of the total number of specimens in the assemblage. It has been extensively reviewed in the zooarchaeological literature (Grayson, 1984; Klein & Cruz-Uribe, 1984; Reitz & Wing, 2008). Since it is a raw count, the quantification is generally not affected by the sampling techniques (Grayson, 1984). On the other hand, one of the main issues with NISP is that it can be very heavily affected by the degree of fragmentation of the specimens, which might tend to artificially increase the counts.

The MNI can be defined as the minimal number of individuals represented by all specimens of a given taxon within an analytical unit (Reitz & Wing, 2008: 205–206). It is much less affected by the fragmentation but can vary greatly depending on the sampling techniques used to group the remains. Given the small size sample size, we used a matching technique that considered paired elements, age, and sex in each stratigraphic subset to assess the MNI by stratigraphic context (test pit and stratigraphic unit). Broader categories such as Mammalia or Vertebrata were not included in these calculations.

Distribution of anatomical parts

The distribution of anatomical parts of relatively abundant species such as deer can be biased by the relative proportion of the different bones in the skeleton. Analyzing the degree of skeletal completeness allows mitigation of this bias by comparing the archaeological distribution of the different anatomical parts with the expected number of specimens in a complete skeleton (Reitz & Wing, 2008: 223).

Richness and diversity

Zooarchaeologists in the Neotropics often use heterogeneity indices to account for the diversity

and the equitability distribution of the taxa in archaeological samples. These indices were initially designed by ecologists as a tool to compare the species diversity among different ecosystems (Peres, 2010). The implementation of this method in archaeology is made difficult because faunal assemblages are not always representative of the past environment. For this reason, both diversity and equitability indices are calculated.

To assess this, we chose to calculate the species richness (number of taxa) using the Shannon-Weaver diversity index ($H' = - \sum (p_i \times \ln p_i)$), which measures the abundance and occurrence of the different species in a sample, and finally the equitability index, derived from the Shannon-Weaver index and from the species richness, which measures how evenly distributed are the taxa (Shannon, 1948; Reitz & Wing, 2008: 110–112).

PRESENTATION OF THE FAUNAL COLLECTION

A total NISP of 199 faunal remains were recovered during excavations in 2017, for a calculated total of 29 MNI (Table 1). An additional eight bones identified as human were found but are not

included in the analysis. The human remains were not recovered from Postclassic burials but were found in the fill.

The faunal analysis may be divided into three main periods as indicated by stratigraphic contexts: the Postclassic period, the post-1530 fire (Contact era) and a more recent period of occupation of the site as a modern cemetery. The remains were not found in association with any specific archaeological feature such as a midden or a burial but came rather from construction fills in the central plaza and the surrounding structures.

The calculation of species diversity and equitability indices shows a decrease of taxonomic richness and diversity over time but a rather stable index of equitability suggesting that the taxa are evenly distributed (Table 2).

	Late Postclassic	Post-Fire (1530)	Recent
Diversity (Shannon-Weaver Index, H')	2,2588201	1,667922985	1,28755033
Species richness (S)	12	6	4
Equitability index (V')	0,909016079	0,930885542	0,928771238

TABLE 2
Diversity indices.

Vernacular name	Taxon	Level of identification	Late Postclassic				Post-fire (c. 1530)				Recent				Total NISP	% Total NISP	Total MNI	% Total MNI
			NISP	% NISP	MNI	% MNI	NISP	% NISP	MNI	% MNI	NISP	% NISP	MNI	% MNI				
Birds	<i>Aves</i>	Class	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
Cattle	<i>Bos taurus</i>	Species		0,0%		0,0%		0,0%		0,0%	2	20,0%	1	25,0%	2	1,0%	1	3,4%
Sheep/Goat	<i>Caprinae</i>	Super family	1	0,6%	1	5,9%	1	7,7%	1	14,3%		0,0%		0,0%	2	1,0%	2	6,9%
Crocodile	<i>Crocodylus moreletii</i>	Species		0,0%		0,0%	4	30,8%	1	14,3%	1	10,0%	1	25,0%	5	2,5%	2	6,9%
Paca	<i>Cuniculus paca</i>	Species	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
Opossum	<i>Didelphis sp.</i>	Species	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
Mammal	<i>Mammalia</i>	Class	19	10,8%		0,0%	2	15,4%		0,0%	5	50,0%		0,0%	26	13,1%		0,0%
Brocket deer	<i>Mazama sp.</i>	Genus	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
White-tailed deer	<i>Odocoileus virginianus</i>	Species	86	48,9%	4	23,5%		0,0%		0,0%	1	10,0%	1	25,0%	87	43,7%	5	17,2%
Squirrel	<i>Sciurus sp.</i>	Genus		0,0%		0,0%	1	7,7%	1	14,3%		0,0%		0,0%	1	0,5%	1	3,4%
Shell	<i>Mollusca</i>	Class	1	0,6%	1	5,9%	1	7,7%	1	14,3%	1	10,0%	1	25,0%	3	1,5%	3	10,3%
Lizard/Snake	<i>Squamata</i>	Order	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
Cottontail Rabbit	<i>Sylvilagus sp.</i>	Genus	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
Peccary	<i>Tayassuidae</i>	Family	1	0,6%	1	5,9%		0,0%		0,0%		0,0%		0,0%	1	0,5%	1	3,4%
Collared Peccary	<i>Pecari tajacu</i>	Species	4	2,3%	2	11,8%	2	15,4%	1	14,3%		0,0%		0,0%	6	3,0%	3	10,3%
Turtle	<i>Testudines</i>	Order		0,0%		0,0%	1	7,7%	1	14,3%		0,0%		0,0%	1	0,5%	1	3,4%
Sea turtle	<i>Cheloniidae</i>	Family	4	2,3%	1	5,9%		0,0%		0,0%		0,0%		0,0%	4	2,0%	1	3,4%
Unidentified vertebrate	<i>Vertebrata</i>	Subphylum	54	30,7%		0,0%	1	7,7%		0,0%		0,0%		0,0%	55	27,6%		0,0%
Total			176		17		13		7		10		4		199		29	

TABLE 1
Quantification of the taxonomic abundance of the faunal remains in Chiantla Viejo by stratigraphic context.

General taphonomic observations

In general, the state of preservation of the osteological material of Chiantla Viejo is rather good, with no flaked or root-etched bones. That allowed the identification of a majority of remains at the level of the family or species. We noticed very few traces of diagenesis on the surface of the bones, suggesting that most of them were buried before weathering could affect the integrity of the materials. Likewise, the bones do not seem to have experienced chemical or physical damage while buried.

Few traces of anthropogenic modifications were observed in the assemblage. Only 10.55% of the total remains were burned, and only two cutmarks associated with butchery practices were observed (Table 3). Among the most notable modifications were two worked bones, a needle fragment and a perforator made from a cervid metacarpal, both

found in probable Postclassic contexts (Figure 4). Gnawing marks, potentially made by dogs, represent a ratio of 4.5% of the total number of remains. This suggests the presence of dogs in the area where organic waste was discarded. This also indicates that some of these bones remained accessible to scavenging animals for some time.

Taxon	Butchery marks	Gnawed specimens	Burnt specimens	Artifactual modifications
<i>Bos taurus</i>	1	1		
<i>Caprinae</i>		2		
<i>Mammalia</i>			2	
<i>Odocoileus virginianus</i>	1	6	18	1
<i>Vertebrata</i>			1	1
Total	2 (1.00% NISP)	9 (4.52% NISP)	21 (10.55% NISP)	2 (1.00% NISP)

TABLE 3
Summary of the taxonomic markers observed in the Chiantla Viejo assemblage.

102A1-1-2Humus
Perforator (proximal epiphysis of a deer metatarsal)



FIGURE 4

Views of a perforator made from a white-tailed deer (*Odocoileus virginianus*) proximal metatarsal (photo: N. Delso).
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The fauna of Postclassic occupation

With 176 NISP, the pre-Contact faunal set constitutes the major part of the archaeological assemblage collected in Chiantla Viejo. At least 103 NISP could be identified to the family level (MNI=17). White-tailed deer (*Odocoileus virginianus*) remains represent 48.9% (n=86) of the number of identified specimens (NISP), corresponding to a minimum of four individuals.

Among the other identified remains, 19 could be associated with large-sized mammals (e.g. cervids, peccaries). The second most abundant taxon are peccaries (*Tayassuidae*), with five NISP representing at least one individual.

Unexpectedly, given the inland location of the site, sea turtle (*Cheloniidae*) was identified (NISP=4). Other species such as the paca (*Cuniculus paca*), the common opossum (*Didelphis* sp.), the rabbit (*Sylvilagus* sp.), and the brocket deer (*Mazama* sp.) were identified in this context with a NISP of one for each.

The fauna from the Contact period (post-1530 fire)

The faunal material from stratigraphic contexts dating to the contact period have a NISP of 13. Despite the small sample size, this subset provided interesting data on the animals used at the site during the Contact period. The presence of crocodile remains (*Crocodylus moreletii*) is interesting because Chiantla is located rather far from the natural distribution area of this taxon that corresponds to the tropical climate zones found in the lowlands to the north. As in the case of the presence of marine turtle remains in pre-Hispanic contexts, the presence of crocodile at the site shows that Chiantla Viejo was located within an exchange network that included both the tropical zones of the Pacific coast and the northern lowlands. Also, the presence of peccary (*Tayassuidae*) suggest the continuation of wild game hunting after the arrival of the European colonists.

The fauna from post-colonial and recent contexts

The stratigraphic contexts considered as “recent” do not belong to a precise chronological hori-

zon. Generally, the bones coming from these sets were found in the upper layers of the stratigraphic sequences. The recent faunal material represents 10 NISP, of which eight correspond to fragments of mammalian bones. It is worth mentioning that most specimens found in this horizon correspond to taxa that were introduced in the region (*Bos taurus*) or translocated from other regions (*Crocodylus moreletii*). The presence of a tarsal bone (cubonavicular) belonging to a caprine (*Capra hircus* or *Ovis aries*) raises some questions, since these animals were introduced to the American continent at the beginning of the 16th century by European colonists.

THE CERVIDS OF CHIANTLA VIEJO

The prevalence of species such as deer or, to a lesser extent, peccaries, fits with patterns relatively common throughout the Maya world (Hamblin, 1984; Montero López, 2009). The cervids, and more particularly the white-tailed deer, hold a prominent place in the Maya culture. Several zooarchaeological studies noted the prominent role played by these animals in the ancient Maya society, notably in the ritual arena. Deer products and particularly the meatiest part of the animals was a central element of ritual feasts among the Maya elite (Emery, 2003; Montero López, 2009). As emphasized earlier, there is not much documentation on the management and use of animals by the ancient Maya of the highlands. Most of our knowledge on this subject comes from Yucatán and other regions of the northern lowlands. On several occasions, Mary Pohl and colleagues highlighted the prominent role played by deer in that region (Pohl, 1976; Pohl & Feldman, 1982). The closeness of humans with this species during the pre-Hispanic period and the contact period seems so great that the question of its domestication or at least of a narrow management of deer populations, particularly by women, has been raised (Hamblin, 1984; Masson & Peraza Lope, 2013). Deer also held a predominant place in community events such as feasts among the Maya elite (Montero López & Varela Scherrer, 2017). In contexts mostly related to daily practices of human consumption, faunal studies carried out in the Petexbatún region (Petén) emphasized the preferential access of the elite to venison (Emery, 2003; White *et al.*, 2004; Montero López, 2013).

In Chiantla Viejo, the bones do not seem to be associated with middens or trash deposits clearly linked with a specific household. Rather, they are secondary deposits brought in to remodel the central plaza and to provide a bulk fill for pyramidal structures. Despite that, we can infer that the general context of the ceremonial center suggests an association of this animal with practices relating to sectors of the Maya elite of Chiantla Viejo. A whole frontal bone, whose antlers were shed, was found in the fill of the 2nd floor (101a / 1-2-2) (Figure 5). Due to the lack of contextual data on this element, it is difficult to provide a definitive interpretation. However, this could be reminiscent of sacrificial practices involving deer body parts, such as the Cuch fertility ritual. This ceremonial activity which has been well documented in other regions of the Maya area from pre-Hispanic times until the present includes the extraction of the antlers (Pohl, 1981). In the Postclassic site of Laguna

de On (Belize), deer crania have been found exclusively in deposits associated with ceremonial areas (Masson, 2015: 193). A similar pattern has also been noticed in the faunal deposits of the Postclassic site of Mayapan (Yucatan) (Masson & Peraza Lope, 2013).

The anatomical distribution analysis of deer remains (head, axial skeleton, front quarter, hind quarter and feet) (Reitz & Wing, 2008: 223) indicates that parts such as the quarters (upper parts of the limbs), which are particularly rich in meat and fat, are more abundant in this subset of the assemblage (Figure 6). Other anatomical parts, such as the head or hind feet, are also present, but in smaller proportions. Other anatomical regions, such as the spine and rib cage (axial skeleton), are underrepresented. This distribution suggests that the deposit is mostly related to refuse from the consumption of meaty parts such as the upper limbs.

101A 1-2-2 Relleno piso #2
Frontal bone of white-tailed deer
(Odocoileus virginianus)



FIGURE 5

Superior view of a frontal bone of white-tailed deer (photo: N. Delsol).

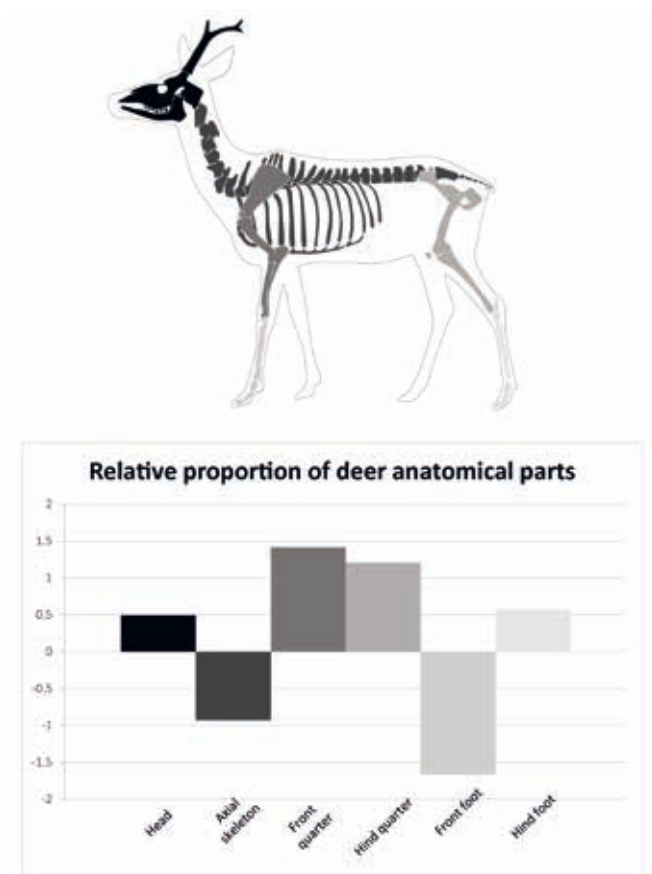


FIGURE 6

Distribution of the different anatomical parts of white-tailed deer found at the site.

Previous studies on deer anatomical parts distribution demonstrated that such a concentration does not always reflect ritual activities or feasts. In some instance, such as Piedras Negras, the concentration of meat-rich parts was found more often in domestic contexts (Montero López, 2009).

DOMESTIC LIVESTOCK IN THE MAYA HIGHLANDS

Domesticated animals of European origin (cattle and caprines) are present at the site although in small numbers: two cow bones and one caprine specimen have been found in the most recent contexts. One bone belonging to a caprine comes from the upper levels of the fill of a base that supported the ball court. Unfortunately, this area was highly disturbed due to the recent use of the site as a cem-

etry; therefore, the stratigraphic relations of this bone are not completely clear. Despite this rather limited presence and the problematic contexts in which the bones were found, these remains are significant to the extent that they could represent some of the earliest known examples of specimens of imported European domesticates in the western Guatemalan highlands. Although the sample size is small, this preliminary study provides an opportunity to question what is known about animal introductions in the Maya highlands. So far very few faunal studies have explicitly focused on that topic in the Maya area in general. The published data is very diverse, but some common features can be highlighted. For example, the pervasiveness of the use of European animals appears to be correlated with the strength of the Spanish influence in each site. In settlements directly under the control of Iberian friars, domestic animals appear to have

been relatively common (DeFrance & Hanson, 2008; Freiwald & Pugh, 2018). On the other hand, in communities more remote from the principal areas of European colonization, the integration of these animals in the daily lives of the Maya natives seem to have been much slower (Emery, 1999).

The first populations of Eurasian ungulates in the Americas were introduced at the very end of the 15th century in the Caribbean, notably on the islands of Hispaniola and Cuba (Oviedo y Valdés, 1851). There, the stocks of cattle and pigs thrived relatively quickly. On the other hand, the introduction of caprine populations seems to have been a more complex process because European sheep and goat breeds did not adapt well in this tropical environment (Williamson & Payne, 1965). It was not until decades after the Spaniards entered the Mesoamerican mainland, that herds were abundant enough to provide a steady supply for the new colonies of New Spain and Guatemala. Most of the livestock entered Mexico through the coast of Veracruz (Bishko, 1952; Sluyter, 1996). The implementation of cattle and sheep herding is rather well documented in Mexico thanks to the municipal decrees of the city of Mexico that organized the meat market (Bejarano, 1889) and the royal decrees that regulated the creation of the *Mesta*, an association of stock owners who handled most of the market out of towns (Dusenberry, 1963).

In Guatemala, the town council of Santiago Almolonga (now Ciudad Vieja), the early colonial capital of Guatemala, had its first meeting in 1524. The choice of Santiago Almolonga for the Spanish settlement was clearly associated with the fact that the area would be quite suitable to raising cattle and sheep (Remesal, 1966: 20). In 1527, the council debated the decision to transfer the capital to another area, northwards, in Chimaltenango. One of the main issues discussed was whether the region was well adapted to grazing animals (Remesal, 1966: 38–40). According to Fuentes y Guzmán (1883:19), the first importer and cattle breeder in Guatemala was the *conquistador* Héctor de la Barreda, who, around 1530, brought a herd from Cuba and settled in what was then called *Valle de las Vacas* (Valley of the Cows), the current location of Guatemala City.

Few historical documents mention the presence of Eurasian livestock in the western Guatemalan highlands during early colonial times. Historical geographical data on the *Sierra de los Cuchumatanes* suggests that this area, like many other regions

of Mesoamerica, suffered dramatic population losses at the end of the 16th century. Consequently, the Spanish landholders were confronted with important restrictions for the use of indigenous laborers, that likely led them to switch to activities that did not require an extensive workforce, such as ranching and stock rearing (Lovell, 2015). The lawsuit between Alvarado and Espinar, however, mentions that the *encomendero* of Huehuetenango raised pigs in the area around Zaculeu in the 1530s. During late colonial times Chiantla became one of the most important markets for ovicaprines in the Maya highlands, with large *haciendas* in the high Cuchumatán plateau and annual pilgrimage festivals that included economic transactions over livestock (Recinos, 1913: 116–119; Lovell, 2015: 138–141).

CONCLUSIONS

While modest, the faunal collection of Chiantla Viejo contains important data for future research questions on the human-animal interactions in the Postclassic Maya highlands. Drawing definitive conclusions from such a small sample would be problematic but given the scarcity of zooarchaeological data in the region, it provides previously unknown data on animal use and management by the ancient inhabitants.

Some important points need to be emphasized here: (1) the presence of species that are non-local to the highlands such as marine turtle (*Cheloniidae*) and crocodiles (*Crocodylus moreletii*). The presence of exotic species suggests that Chiantla Viejo participated in networks of exchange that included both the coastal regions of the Pacific in the south and the northern tropical lowlands; (2) there is a likely discreet presence of Eurasian domestic species introduced by the Spanish colonists, particularly caprines, although their stratigraphic relations are not conclusive; (3) the set of postclassic animal remains is dominated by white-tailed deer (*Odocoileus virginianus*). These animals held, and still hold to some extent, a very prominent role in the Maya society particularly among the upper social classes. The composition of this assemblage seems to indicate a potential use in ritual contexts, but also the consumption of their meat, potentially associated with collective feasts.

This preliminary study is the first assessment of the human-animal interactions in the western Gua-

temalan highlands at this site. A greater emphasis on the collection and the study of animal remains will surely help to refine the questions raised here and provide a better understanding of how the ancient Maya of the Postclassic Cuchumatanes managed and used local and non-local faunas.

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