Animals and *Inequality* in the Ancient World

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Animals and Inequality in the Ancient World

2

Entering the Underworld

Animal Offerings at the Foot of the Great Temple of Tenochtitlan

Leonardo López Luján, Ximena Chávez Balderas, Belem Zúñiga-Arellano, Alejandra Aguirre Molina, and Norma Valentín Maldonado

INTRODUCTION

Archaeological data relating to the fauna exploited by the Mexicas and their neighbors in the Basin of Mexico are relatively sparse. To a large extent, this is due to the fact that the majority of pre-Hispanic settlements from the fifteenth and sixteenth centuries have gradually been buried under Mexico City, a megalopolis that today houses more than 20 million inhabitants and that continues to grow at an unbridled rate (see Parsons 1989). Archaeologists have excavated only a few rural sites in detail, revealing some of the complex human-animal relationships in these kinds of contexts at the time of the arrival of the Spaniards. Outstanding examples include the projects of Elizabeth M. Brumfiel (2005) at Xaltocan, Raúl Ávila López (2006) at Mexicaltzingo, and Mary G. Hodge (2008) at Chalco, which focus on these modest settlements located at opposite ends of the Basin's lake system.

Based on the results published by these meticulous researchers, the faunal remains at these sites were dominated by a great diversity of wild animals that were captured locally to serve as food and raw materials (Ávila López 2006; Guzmán Camacho and Polaco 2008; Polaco and Guzmán 2008; Valadez Azúa and Rodríguez Galicia 2005). These animals included mainly ducks, rabbits, frogs, deer, turtles, and, in much lesser quantities, squirrels, opossums, armadillos, quails, freshwater fish, and mollusks. Also present in very high numbers were domestic animals such as the dog and turkey.

Unfortunately, there is little detailed archaeological information available on the residential units at major urban sites in the Basin, such as Tenochtitlan

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and Tlatelolco. This prevents us from establishing the similarities and differences between the countryside and the city, and between social groups of low, medium, and high status, when it comes to uses and meanings attributed to animals. In contrast, the fauna recovered in urban archaeological contexts comes almost entirely from public areas with a ritual function. Remains from these areas can tell us not so much about the diet of the average inhabitant of Tenochtitlan as how animals were used symbolically by individuals of high status; which environments were reached during the empire's peak; how particular species were captured, transported, and kept in the royal palace; and why they were eventually buried inside temples and under plaza floors.

ANIMAL REMAINS FROM TENOCHTITLAN

The island of Tenochtitlan, the capital of the Mexica empire, is well-known archaeologically as a result of the Templo Mayor Project (1978–2011), which has explored its sacred precinct for more than thirty years (López Luján 2006a:Volume 1; 2006b; López Luján and Chávez Balderas 2010a; Matos Moctezuma 1988; Matos Moctezuma and Cué Ávalos 1998). This impressive precinct rose at the exact intersection of two principal city axes. It was a rectangular area limited by a platform measuring about 460 by 430 meters. Inside was located an enormous complex of shrines, among which the Great Temple, a pyramid topped by two chapels consecrated to the rain god Tlaloc and the solar god Huitzilopochtli, stood out. There were also schools for nobles, ballgame courts, sacred springs, skull racks, and an enclosure that contained a recreation of "arid land."

After seven long field seasons working at the Great Temple and surrounding religious buildings, 165 buried offerings have been excavated. We have recorded in these ritual contexts an amazing diversity of animal species, infinitely superior to what has been observed at rural sites such as Xaltocan, Mexicaltzingo, and Chalco. As a result of archaeozoological research on materials recovered in the heart of Tenochtitlan, more than 250 species have been identified (López Luján 2005:101–103; Polaco and Guzmán 1994). The resulting information has been on display to the public in a gallery devoted to fauna in the Templo Mayor Museum (Polaco 1991; Polaco et al. 1989) and has also been published in numerous studies on biological, ecological, and taphonomic aspects of the animals deposited in offerings (e.g., Álvarez 1982; Álvarez and Ocaña 1991; Álvarez et al. 1982; Díaz Pardo 1982; Díaz Pardo and Teniente Nivón 1991; Guzmán Camacho and Polaco 2000; López Luján 2006a:Volume 2; López Luján and Argüelles Echevarría 2010; López Luján and Polaco 1991; López

Luján and Zúñiga-Arellano 2010; Polaco 1982, 1986; Polaco and Guzmán 1994; Olmo Frese 1999; Solís et al. 2010; Valentín Maldonado 1999a, 1999b, 2002; Valentín Maldonado and Gallardo Parrodi 2006; Valentín Maldonado and Zúñiga-Arellano 2003, 2006, 2007). Equally numerous are publications referring to cultural dimensions such as a preference for certain species; places, ways, and periods to obtain living or dead fauna; mechanisms of circulation; techniques of sacrifice and modification of cadavers; indigenous taxonomies; and persistence or transformation of all of these behaviors through time (Aguirre Molina 2002; Chávez et al. 2010; Jiménez 1991; López Luján 1991, 2006a:Volume 1; López Luján et al. 2010; Quezada Ramírez, Valentín Maldonado, and Argüelles Echeverría 2010; Temple Sánchez-Gavito and Velázquez Castro 2003; Velázquez Castro 1999, 2000, 2007; Velázquez Castro and Melgar Tisoc 2006; Velázquez Castro, Zúñiga-Arellano, and Valentín Maldonado 2004; Velázquez Castro, Zúñiga-Arellano, and Temple Sánchez-Gavito 2007; Velázquez Castro and Zúñiga-Arellano 2003). There are even published studies on the conservation and restoration of faunal remains uncovered by our project (Grimaldi 2001; Gallardo 2000; Hasbach 2000).

Among the principal features of the faunal remains from the Templo Mayor, we can mention the following:

1. The presence of species corresponding to six different phyla (López Luján 2005:101–102; Polaco 1991:16). Invertebrates preponderate (five phyla: Porifera, Coelenterata, Echinodermata, Arthropoda, and Mollusca), followed by vertebrates (phylum Chordata, six classes: Chondrichthyes, Osteichthyes, Amphibia, Reptilia, Aves, and Mammalia).
2. The predominance of species endemic to regions quite far away from the Basin of Mexico (López Luján 2005:101; Matos Moctezuma 1988:115–118; Polaco 1991; Polaco et al. 1989). These were imported by the Mexicas from practically all corners of the empire and beyond, from contrasting ecosystems such as tropical rainforests, temperate zones, marine environments, estuaries, coastal lagoons, and mangrove swamps.
3. The scarcity of edible species and the clear interest on the part of Mexica priests in those animals to which they attributed profound religious or cosmological significance (Díaz-Pardo and Teniente-Nivón, 1991:77; López Luján 2005:103). For example, predominating among fish were toxic species or those with rare anatomical features such as sharp teeth, strange bodies, bright colors, or strong dermal spines.
4. Evidence of captivity (López Luján 2006a:1: 223; Quezada Ramírez, Valentín Maldonado, and Argüelles Echeverría 2010:22–23). Numerous birds

of prey display evidence of bone pathologies that might have prevented them from surviving if not in captivity. However, their skeletons speak to us of healthy, well-fed individuals. Therefore, it is highly likely that the Mexicas captured and kept them, feeding them for long periods prior to their death.

5. Traces of cultural processes for modifying the animal cadavers, some of which may be qualified as "taxidermic" interventions (López Luján 2005:103, López Luján 2006a:1:222–223; Quezada Ramírez, Valentín Maldonado, and Argüelles Echeverría 2010:19–22). In fact, numerous specimens of fish, crocodiles, serpents, and birds of prey were prepared for the preservation of their heads and skins, whereas the body parts of others were transformed into ornaments, ritual instruments, or religious symbols.
6. The use of fauna in offerings to recreate vertical tiers of the universe and configure veritable cosmograms (López Luján 1998, 2005, 2006a: Volume 1). Thus, coral, clams, and snails symbolized the aquatic underworld; felines, turtles, and sawfish, the surface of the earth; and eagles, herons, and hummingbirds, the skies above.

In the rest of this chapter we present recent results from the seventh field season (2007–2012) of the Templo Mayor Project related to animal remains. Given the limited space, we focus on analyzing a single buried offering placed in a stone box—Offering 125—which was very small in dimensions but extremely rich in information concerning the ancient relationship between humans and fauna.

OFFERING 125

Since March 2007 we have been working at the foot of the Templo Mayor, the ritual setting where, according to historical accounts, the Mexica kings were cremated and buried (Figure 2.1) (Draper 2010; López Luján and Chávez Balderas 2010a; Matos Moctezuma and López Luján 2007). In this area we uncovered an enormous monolith, measuring 4.17 by 3.62 by 0.38 meters, which is even larger than the well-known Calendar Stone (Matos Moctezuma and López Luján 2009). This andesite sculpture represents the feminine aspect of Tlaltecuhtli, the venerated and feared Earth Goddess, progenitor of the creatures of the universe and devourer of their corpses after death (López Luján 2010).

To the west of this monolith and exactly at plaza level, we found a unique monument built with sixteen pinkish andesite blocks (Figure 2.2). These heavy pieces were overlapped to form a quadrangular frame in the shape of an inverted, stepped pyramid (Figure 2.3). Its silhouette reminds us of the

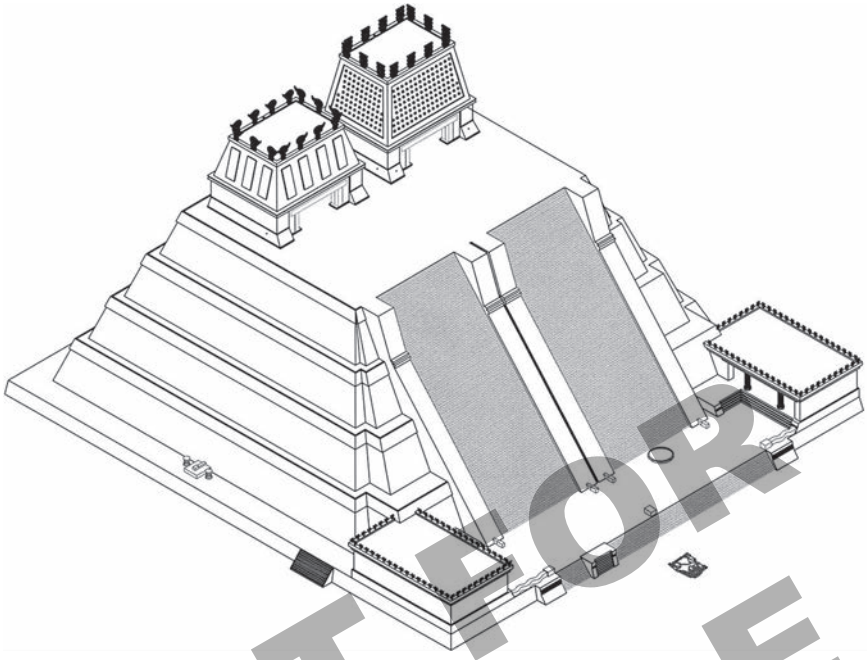

Figure 2.1. *Reconstruction drawing of the Great Temple of Tenochtitlan, showing the location of the Earth Goddess Tlaltecuhtli monolith. (Drawing by Tenoch Medina. © Proyecto Templo Mayor)*

maw, which is also stepped, of a reptilian Tlaltecuhtli, a mythological being who eats cadavers at the very center of the universe (Códice Borgia 1993:8, 53; Códice Vaticano B 1993:8, 23; López Luján 2010:117; Seler 1963). Therefore, it likely symbolizes the entrance to the underworld, the realm of the dead.

Under this stone monument and contemporary with the Great Temple's plaza floor VI-5 (AD 1486–1502), we found four other monuments with very similar characteristics, each one corresponding to an older and consecutive plaza level (AD 1440–1486; see Draper 2010:122–123; López Luján 2010:71–75). Within these five stone monuments, six superimposed buried offerings were detected. Offering 125, which dates back to the reign of Ahuitzotl (AD 1486 to 1502), is the richest of all, containing a total of 3,899 cultural and organic items. It was deposited inside a box made of small basalt blocks, oriented east-west, and with maximum dimensions of 50 by 85 by 46 centimeters. Huge slabs were used at the end of the ritual to cover the box and to protect its precious contents.

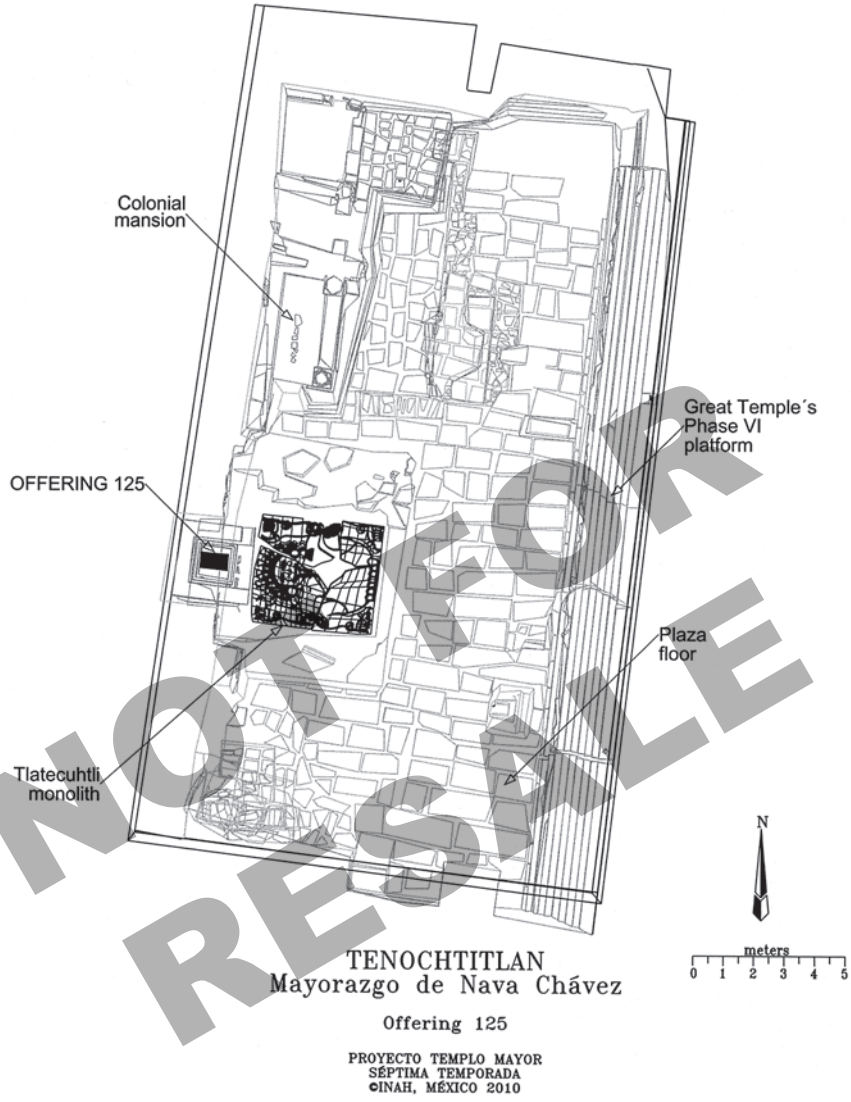

Figure 2.2. *Location of Offering 125, west of the Tlaltecuhtli monolith. (Drawing by Tenoch Medina. © Proyecto Templo Mayor)*

After a careful spatial analysis, we concluded that the Mexica priests laid six layers of objects inside this box. The first or bottom layer was composed of a richly dressed canid (Figure 2.4). Around this animal we found a group of

Figure 2.3. *Monumental stone frame in the shape of an inverted, stepped pyramid. It symbolized the entrance to the underworld and contained Offering 125. Photo by Leonardo López Luján. © Proyecto Templo Mayor.*

sacrificial flint knives, all of them dressed with costumes and insignia of nocturnal divinities or warriors killed in battle. The canid and knives were covered by a thick layer of marine animals. This was followed by more flint knives, the bodies of two golden eagles, and an artifact made of spider-monkey hair (Figure 2.5). The ceremony ended by depositing copal resin and sealing the box with gray andesite slabs.

ANIMAL REMAINS

The taphonomic study of Offering 125 and the meticulous analysis of the faunal specimens yielded highly varied conclusions. These were enriched by historical and iconographic information with important implications concerning economic, political, and religious dimensions.

In the offering were 1,945 faunal elements, corresponding to a minimum number of 1,264 individuals. They were classified in five phyla, ten classes, forty-six families, fifty-eight genera, and fifty-six species (Table 2.1). Of the five extant phyla, Mollusca is the most abundant (79 percent of the sixty-two

Figure 2.4. *Offering 125: deepest excavation level, with canine skeleton. (Photo by Leonardo López Luján. © Proyecto Templo Mayor.)*

Figure 2.5. *Offering 125: uppermost excavation level, with eagle skeletons and marine animals. (Photo by Leonardo López Luján. © Proyecto Templo Mayor.)*

Table 2.1 Offering 125: Identified Taxa

Phylum	*Class*	*Scientific name*	*Common name*
Coelenterata	Anthozoa	*Acropora cervicornis*	Staghorn
Coelenterata	Anthozoa	*Gorgonia* sp.	Soft coral
Echinodermata	Echinoidea	*Echinometra vanbrunti*	Sea urchin
Arthropoda	Malacostraca	*Coelocerus spinosus*	Channelnose spider crab
Arthropoda		*Macrobrachium americanum or M. carcinum*	Freshwater shrimp
Mollusca	Polyplacophora	*Chiton marmoratus*	Marbled chiton
Mollusca	Gastropoda	*Agaronia propatula**	Snail
Mollusca	Gastropoda	*Astraea* (*Ubanilla*) *olivacea*	Snail
Mollusca	Gastropoda	*Astraea* (*Ubanilla*) *unguis**	Snail
Mollusca	Gastropoda	*Busycon* (*Fulguropsis*) *spiratum plagosum**	Snail
Mollusca	Gastropoda	*Cantharus* (*Pollia*) *sanguinolentus**	Snail
Mollusca	Gastropoda	*Columbella fuscata*	Snail
Mollusca	Gastropoda	*Columbella major**	Snail
Mollusca	Gastropoda	*Conus spurius atlanticus*	Alphabet cone
Mollusca	Gastropoda	*Crepidula* (*Bostrycapulus*) *aculeata*	Spiny slipper-shell
Mollusca	Gastropoda	*Crucibulum* (*Crucibulum*) *spinosum*	Spiny cup-and-saucer
Mollusca	Gastropoda	*Cypraea* (*Macrocypraea*) *cervus**	Atlantic deer cowrie
Mollusca	Gastropoda	*Hipponix grayanus**	Snail
Mollusca	Gastropoda	*Jenneria pustulata**	Pustulate cowrie
Mollusca	Gastropoda	*Leucozonia cerata**	Snail

continued on next page

Table 2.1—*continued*

Phylum	*Class*	*Scientific name*	*Common name*
Mollusca	Gastropoda	*Malea ringens*	Snail
Mollusca	Gastropoda	*Mauritia arabicula**	Snail
Mollusca	Gastropoda	*Morum* (*Morum*) *tuberculosum**	Snail
Mollusca	Gastropoda	*Nassarius luteostomus**	Snail
Mollusca	Gastropoda	*Nerita* (*Cymostyla*) *scabricosta*	Rough-ribbed Nerita
Mollusca	Gastropoda	*Nodilittorina* (*Fossarilittorina*) *modesta**	Conspersa periwinkle
Mollusca	Gastropoda	*Oliva sayana*	Lettered olive
Mollusca	Gastropoda	*Olivella* (*Lamprodoma*) *volutella*	Snail
Mollusca	Gastropoda	*Opeatostoma pseudodon*	Thorn latirus
Mollusca	Gastropoda	*Persicula imbricata**	Snail
Mollusca	Gastropoda	*Pilosabia pilosa**	Bearded hoof-shell
Mollusca	Gastropoda	*Plicopurpura pansa**	Snail
Mollusca	Gastropoda	*Polinices hepaticus*	Brown moon snail
Mollusca	Gastropoda	*Stramonita biserialis**	Two row rock-shell
Mollusca	Gastropoda	*Thais* (*Stramonita*) *haemastoma canaliculata**	Hay's rock-shell
Mollusca	Bivalvia	*Anadara* (*Cunearca*) *bifrons**	Clam
Mollusca	Bivalvia	*Anodonta chalcoensis**	Freshwater clam
Mollusca	Bivalvia	*Arca pacifica**	Clam
Mollusca	Bivalvia	*Atrina* sp.	Clam
Mollusca	Bivalvia	*Chama* (*Chama*) *echinata*	Clam
Mollusca	Bivalvia	*Codakia distinguenda**	Clam
Mollusca	Bivalvia	*Corbula* (*Caryocorbula*) *ovulata**	Clam

continued on next page

Table 2.1—*continued*

Phylum	*Class*	*Scientific name*	*Common name*
Mollusca	Bivalvia	*Crassostrea virginica*	Eastern oyster
Mollusca	Bivalvia	*Dinocardium robustum*	Giant Atlantic cockle
Mollusca	Bivalvia	*Donax* (*Amphichaena*) *kindermanni**	Clam
Mollusca	Bivalvia	*Donax* (*Chion*) *punctatostriatus**	Clam
Mollusca	Bivalvia	*Megapitaria squalida**	Clam
Mollusca	Bivalvia	*Modiolus americanus*	Tulip mussel
Mollusca	Bivalvia	*Nephronaias aztecorum**	Freshwater clam
Mollusca	Bivalvia	*Pitar* (*Hysteroconcha*) *lupanaria*	Clam
Mollusca	Bivalvia	*Protothaca* (*Leukoma*) *asperrima**	Clam
Mollusca	Bivalvia	*Spondylus princeps*	Pacific thorny oyster
Mollusca	Bivalvia	*Tellina* (*Arcopagia*) *fausta*	Faust tellin
Mollusca	Bivalvia	*Trachycardium* (*Mexicardia*) *panamense**	Clam
Chordata	Actinopterygii	*Arothron* sp.	Fat puffer
Chordata	Actinopterygii	*Hyporhamphus* sp.	Halfbeak
Chordata	Actinopterygii	*Lutjanus* sp.	Snapper
Chordata	Reptilia	*Crotalus molosus*	Rattle snake
Chordata	Aves	*Aquila chrysaetos*	Golden eagle
Chordata	Aves	*Cyrtonyx montezumae*	Montezuma quail
Chordata	Mammalia	*Ateles geoffroyi*	Spider monkey
Chordata	Mammalia	*Canis lupus*	Wolf or dog

Note: Newly recorded species in Tenochtitlan marked with *.

taxa) with forty-eight species and one genus of snails, clams, and chitons. This is followed by the phylum Chordata (12.9 percent), with three genera of fish (fat puffer, halfbeak, and snapper), one species of reptile (rattlesnake), two species of birds (Montezuma quail and golden eagle), and two species of mammals (spider monkey and a canid that could be a wolf or a dog). The phylum Coelenterata (3.2 percent) is represented by one genus (soft coral) and one species (staghorn), while Arthropoda (3.2 percent) figures in the list with two species (channelnose spider crab, freshwater shrimp). Finally, the phylum Echinodermata (1.6 percent) includes a single species (sea urchin).

The identified taxa lived in nine different environments including coastal seas, reefs, estuaries, freshwater environments, grasslands/pine-oak forests, hillsides and prairies, temperate and tropical forests, temperate and arid mountains, and deserts (Table 2.2). Of the sixty-two taxa identified, fifty-four are endemic to ocean environments (87.1 percent). Thirty-five species (71.4 percent) come from the Panamic Province (Pacific Ocean): twenty-two species of snails, twelve species of clams, and the sea urchin. In contrast, twelve species (24.5 percent of the marine species) come from the Caribbean Province (Atlantic Ocean): six species of snails, three of clams, the staghorn, the marbled chiton, and the channelnose spider crab. Only a single species of snail (*Crepidula aculeata*) and clam (*Modiolus americanus*) live in both provinces (4.1 percent).

These percentages might have a straightforward historical explanation. It is known that during Ahuitzotl's reign (AD 1486–1502), most of the conquests were on the Pacific Coast of Mesoamerica (Hassig 1988:200–218). In those years, Cihuatlan, Tecpantepec, Ayotlan, Ometepec, Xoconochco, and Miahuatlan were converted into tributary provinces, while certain regions of Tehuantepec and Xochtlan were reconquered. In this way, the Mexica and their allies added territories located in the modern-day Mexican states of Guerrero, Oaxaca, and Chiapas to their domains. Obviously, this afforded them unlimited access to the resources from the Pacific Ocean, as a result of both tribute and trade.

As for how the marine animals could have been collected, this was generally not difficult. Almost all of the species identified lived in shallow waters, on rocks or atop other shells, under sandy layers in tidal zones, in coral reefs, or in seagrass beds. The only exceptions are the clam species Spondylus calcifer, *Spondylus princeps*, and *Chama echinata*, which dwell in rocky substrata at a depth of ten to twenty meters, which implies diving was necessary to get them. On the other hand, we know that these marine animals were alive when they were collected in their natural habitat and perhaps they were also still

Table 2.2 Offering 125: Provenience of Animals and Minimum Number of Individuals (MNI)

	Province		*Environment*										
Taxa	*Caribbean*	*Panámica*	*Estero*	*Coastal sea*	*Reef*	*Freshwater*	*Forest of pin-oaks, pasture, zacatonal*	*Mountain, hillside & meadow*	*Warm, temperate forest*	*Temperate & arid mountain*	*Rocky area of forest, savanna & desert*	*MNI*
Acropora cervicornis	x				x							2
Gorgonia sp.	x	x			x							1
Echinometra vanbrunti		x		x								4
Coelocerus spinosus	x			x								1
Macrobrachium americanum or *M. carcinus*						x						2
Chiton marmoratus	x			x								104
Agaronia propatula		x		x								2
Astraea olivacea		x		x								11
Astraea unguis		x		x								3
Busycon spiratum plagosum	x			x								1
Cantharus sanguinolentus		x		x								3
Columbella fuscata		x		x								323
Columbella major		x		x								6

continued on next page

Table 2.2—*continued*

	Province		*Environment*									
Taxa	*Caribbean*	*Panamica*	*Estero*	*Coastal sea*	*Reef*	*Freshwater*	*Forest of pin-oaks, pasture, zacatonal*	*Mountain, hillside & meadow*	*Warm, temperate forest*	*Temperate & arid mountain*	*Rocky area of forest, savanna & desert*	*MNI*
Conus spurius atlanticus	x			x								1
Crepidula aculeata	x	x		x								1
Crucibulum spinosum		x		x								1
Cypraea cervus	x			x								1
Hipponix grayanus		x		x								1
Jenneria pustulata		x		x								2
Leucozonia cerata		x		x								1
Malea ringens		x		x								1
Mauritia arabicula		x		x								7
Morum tuberculosum		x		x								1
Nassarius luteostomus		x		x								1
Nerita scabricosta		x		x								473
Nodilittorina modesta		x		x								9
Oliva sayana	x			x								1

continued on next page

Table 2.2—*continued*

	Province		*Environment*								
Taxa	*Caribbean*	*Panámica*	*Estero*	*Coastal sea*	*Reef*	*Freshwater*	*Forest of pin-oaks, pasture, zacatonal*	*Mountain, hillside & meadow*	*Warm, temperate forest*	*Temperate & arid mountain*	*Rocky area of forest, savanna & desert*	*MNI*
Olivella volutella		x		x								2
Opeatostoma pseudodon		x		x								1
Persicula imbricata		x		x								2
Pilosabia pilosa		x		x								1
Plicopurpura pansa		x		x								1
Polinices hepaticus	x			x								4
Stramonita biserialis		x		x								3
Thais canaliculata	x			x								2
Anadara bifrons		x		x								1
Anodonta chalcoensis						x						1
Arca pacifica		x		x								1
Atrina sp.	x	x		x								2
Chama echinata		x		x								108
Codakia distinguenda		x		x								12

continued on next page

Table 2.2—*continued*

Taxa	Province		Environment									MNI
	Caribbean	*Panamica*	*Estero*	*Coastal sea*	*Reef*	*Freshwater*	*Forest of pin-oaks, pasture, zacatona*	*Mountain, hillside & meadow*	*Warm, temperate forest*	*Temperate & arid mountain*	*Rocky area of forest, savanna & desert*	
Corbula ovulata		x		x								1
Crassostrea virginica	x			x								1
Dinocardium robustum	x			x								27
Donax kindermanni		x		x								1
Donax punctatostriatus		x		x								2
Megapitaria squalida		x		x								2
Modiolus americanus	x	x		x								1
Nephronaias aztecorum						x						71
Pitar lupanaria		x		x								1
Protothaca asperrima		x		x								1
Spondylus princeps		x		x								2
Tellina fausta	x			x								33
Trachycardium panamense		x		x								1

continued on next page

Table 2.2—*continued*

	Province		*Environment*									
Taxa	*Caribbean*	*Panámica*	*Estero*	*Coastal sea*	*Reef*	*Freshwater*	*Forest of pin-oaks, pasture, zacatonal*	*Mountain, hillside & meadow*	*Warm, temperate forest*	*Temperate & arid mountain*	*Rocky area of forest, savanna & desert*	*MNI*
Arothron sp.		x	x	x	x							1
Hyporhamphus sp.	x	x	x	x								5
Lutjanus sp.	x	x	x	x								2
Crotalus molossus											x	1
Aquila chrysaetos									x			2
Cyrtonyx montezumae								x				2
Ateles geoffroyi										x		1
Canis lupus											x	1

alive when they were offered in Tenochtitlan. This is evident from the bright colors and magnificent condition of most of the specimens, in addition to the fact that the clams still have a ligament or hinge, the snails an operculum, and the sea urchins the Aristotle's lantern or chewing organ. This also means that these animals were not consumed as food but rather were deposited whole in Offering 125 for their symbolic value. In fact, the vast majority of species recovered are not edible, with the exception of Eastern oysters (*Tellina fausta*), freshwater clams, and some marine clams (*Megapitaria squalida*, *Donax kindermanni*, and *D. punctatostriatus*).

CAPTIVITY

By all indications, once they reached Tenochtitlan, many living animals were confined alive to await the ceremonies in which they were offered to the gods of the sacred precinct. A good example is represented by the two adult eagles from Offering 125. Ninety-seven percent of their bones were recovered, all in magnificent condition and without any traces of perimortem cut marks, indicating that both were buried soon after death, with the decomposition of their bodies taking place within the box containing the offering. The priests placed these animals with their wings folded and feet tied together at the tarsometatarsi.

The more robust skeleton with a greater wing span represents a female eagle. It was found in the northwest quadrant of the box. It was placed on its right side with a general west-east orientation and with the head toward the west. This specimen had a mother-of-pearl, ring-shaped pectoral (*anahuatl*) over the sternum and pear-shaped, copper rattle bangles around the tarsometatarsi. The skeleton of the male, as in nature, is smaller. It was deposited in the southwest quadrant, also lying on its right side, with a general west-east orientation, but with the head and legs flexed toward the south. This specimen wore lavish, pear-shaped, gold rattle bangles on its tarsometatarsi.

The skeleton of the male eagle is distinguished by a visible deformity in the right wing, precisely at the articulation of the humerus with the ulna and the radius (Figure 2.6). The articular surfaces of the humerus are inclined toward the ventral part, which implies that the distal portion of the wing was bent toward the left, when the normal position would be toward the opposite side. Digital X-rays and CT scans indicate that this deformity was caused by a fracture. Importantly, although the fracture healed, this bird was unable to fly, which would have prevented it from hunting and feeding. Its bones, however, were robust and were of normal dimensions, which suggest that it was

Figure 2.6. *Male golden eagle's wings. That on the right shows a clear deformity at the articulation of the humerus with the ulna and the radius. (Photo by Leonardo López Luján. © Proyecto Templo Mayor.)*

kept in captivity and was cared for by expert hands. In this regard, we should recall that within Moctezuma's palace, there was a Totocalli, or "House of Birds," where eagles and many other birds were kept in cages (see Blanco et al. 2002; Nicholson 1955). Franciscan friar Bernardino de Sahagún (2000:762) mentions that at the Totocalli "there were stewards who took care of all sorts of birds, such as eagles and other large birds, that were called *tlauhquechol* [roseate spoonbills] and *zacuan* [Montezuma oropendola] and parrots and *alome* [scarlet macaws] and *coxolitli* [pheasants]."

On the other hand, the female eagle skeleton from Offering 125 contained on its sternum a concentration of highly fragmentary Montezuma quail bones, with green-bone fracture patterns and homogeneous coloring at the edges (see Serjeantson 2009:118–119). We believe that these bones could have been part of a pellet, in other words, the mass of undigested parts of a bird's food that is processed inside the gizzard and occasionally regurgitated. In the case of this offering, the exclusive presence of Montezuma quail might mean that the eagle, before being buried, had lived in captivity and was fed only quails.

In an evocative comment, Hernán Cortés (1994:67) noted that in the Totocalli there were three hundred men to attend to these birds, taking care of them: "And everyday all of these birds were given hens to eat, and no other food." Thus the faunal evidence fits well with historical accounts of Mexica practices of raising birds of prey.

The Totocalli was also the area of the palace where the most experienced fine metalworkers, lapidary-stone craftsmen, painters, and feather-workers in the king's employ were located (Sahagún 2000:762). The latter were able to handle the birds to harvest feathers without killing them to make ornaments and accoutrements that were status markers par excellence. Perhaps in the royal palace craftsmen also produced ritual artifacts that we see in the offerings. For example, sacrificial knives that were dressed as divinities by means of insignia made with clams, snails, and monkey skin were found in Offering 125 (López Luján and Aguirre Molina 2010). The offering also contained spider-monkey hair spatially associated with the characteristic gold ornaments of the pulque gods. However, it is hard to know if these remnants of hair were part of a headdress or a costume (López Luján and Chávez Balderas 2010b). Anyway, it is interesting to note that a priest wearing these same gold ornaments appears in the Códice Magliabechi (1996:55r) beside another individual dressed as a monkey.

SYMBOLISM

As we mentioned earlier, the animals from the Tenochtitlan offerings were selected more for their symbolic value than for their use as food. A good example in this regard is the female canid discovered at the bottom of the votive box. In the case of this animal, 95 percent of the bones, all in magnificent condition, were found, although perimortem fractures were detected on the left side of the seventh, eighth, and ninth ribs. We know that the skeleton belongs to an individual of the *Canis lupus* species, but so far it has not been possible to determine if it is a Mexican wolf (*Canis lupus baileyi*) or a dog (*Canis lupus familiaris*). The skeleton has proportions and morphology unlike those of the other wolves discovered at the Templo Mayor, as well as many characteristics compatible with the wolf, a few others with the dog, and others with both.

The canid skeleton represents an individual of advanced age. This is supported by the obliteration of the cranial sutures, the fusion of the epiphyses of the long bones, the fusion of the pelvis with the sacrum, as well as the presence of the hemal arch in the tail vertebrae and of abundant bone spurs resulting

from degenerative osteoarthritis. The longevity and osteoarthritis together with skeletal indicators of a good diet suggest that this animal benefited from human care while it was alive.

Based on our taphonomic study, the canid was buried very shortly after death and its body decomposed within the offertory box. It is clear that it was placed in a manner similar to that of the eagles: lying on its right side, with a general west-east orientation. The canid's head was next to the west wall of the box, with its snout toward the northwest. The front legs were extended toward the east and the back ones semiflexed and crossed next to the east wall.

Surprisingly, the canid wore jewels that were the prerogative of royalty: two earflares made of wood covered with turquoise mosaic, a necklace with sixty-four greenstone beads, a belt with thirteen *Oliva* gastropods, and two bangles with five gold bells each on the back legs. If the remains turn out to be those of a dog, which we are waiting to corroborate on the basis of DNA analysis carried out by Steve R. Fain, we might speculate that it was a royal pet buried to help its master reach the beyond, in accord with widespread beliefs about the afterlife throughout Mesoamerica (Chávez 2007).

We should also recall that this canid was covered with a thick layer of aquatic animals: snails, clams, chitons, fish, sea urchins, corals, freshwater shrimps, and a spider crab. In our opinion, the priests endeavored to express, through ritual language, a typical "definition by extension"—that is, a definition that expressed the whole by enumerating each one of its parts (see Dehouve 2009). In the Nahuatl language, the definition of a whole tended to be given through *difrasismos* or *trifrasismos*, in other words, by listing only two or three components symbolically connected. However, in Offering 125, we are faced with a true *inventory*, or exhaustive list. Therefore, the presence of fifty-five different taxa of sea and freshwater animals would materially express the idea of "aquatic world." In sum, we would have a canid literally immersed in a watery environment, which is significant in cosmological and eschatological terms. Historical documents speak of the belief in *Apanohuayan* ("The Place for Crossing the Water"), a dangerous river that had to be crossed by the dead on their journey to the ninth level of the underworld. For this journey they relied on the help of their dog companion. This idea is expressed in the scheme of the underworld represented in the Códice Vaticano A.3738 (1996:2), where the head of a swimming dog emerges from an aquatic band rendered with snails (Figure 2.7). In sum, if we tentatively identify the canid of Offering 125 as a dog, the priest could have materialized with it the idea of "dog under water" or taking it further, "dog that crosses the waters of Apanohuayan to lead his master to the ninth level of the underworld."

As for the golden eagles, we must recall that these birds of prey were for the Mexica the symbols par excellence of the sun and its daily movement. More specifically, the setting sun was known in Nahuatl as *Cuauhtemoc*, meaning "descending eagle." Taking this fact into account, as well as that Offering 125 was inside a stone stepped-frame representing the entrance to the underworld and that the two eagle skeletons were facing westward, we think these animals could have alluded to the dying sun or to the souls of eagle warriors heroically deceased in battle.

CONCLUSION

Based on this brief study, not only is it possible to confirm the richness of the contexts excavated by the Templo Mayor Project, but also their marked differences from rural domestic contexts in the Basin of Mexico when it comes to the use and significance of animals. We have been able to confirm that at the ceremonial center of the principal urban settlement in the region, the most highly prized species of fauna were not those that could be used as a food source or for obtaining raw materials for the production of tools. On the contrary, the species used were those that possessed symbolic qualities related to the social hierarchy and religion of dignitaries in the imperial capital (also see Sugiyama et al., chapter 1, this volume). Therefore, the enormous investment made by the Mexica state to obtain exotic animals should come as no surprise. Suffice it to consider the effort implied by the capture of certain specimens, their transportation—often alive—from inhospitable and remote regions, and, in certain cases, their subsequent upkeep in the palace. In this last case, it is clear that the animals not only served for the enjoyment of the sovereign and his court but also for the specialized production of exclusive consumption goods for the nobility, or to be buried in offerings in the Templo Mayor and in other religious buildings in the city.

On the other hand, the biological analysis of the offerings makes it clear that the Mexica priests invested considerable effort in these ritual deposits to emphasize the quantity of individuals, the diversity of species, and the plurality of habitats from which they came—aspects that also speak to us of the political and economic power of the empire. Although it is true that many animals (or the pieces manufactured from them) were buried as gifts to the supernatural, in the majority of cases they were used as symbols of specific gods, of particular regions in the universe, or of important cosmic processes. In the case of Offering 125, it is highly probable that the eagles, marine species, and the canid alluded to the transcendental passage to the beyond that ensued after death, which would be

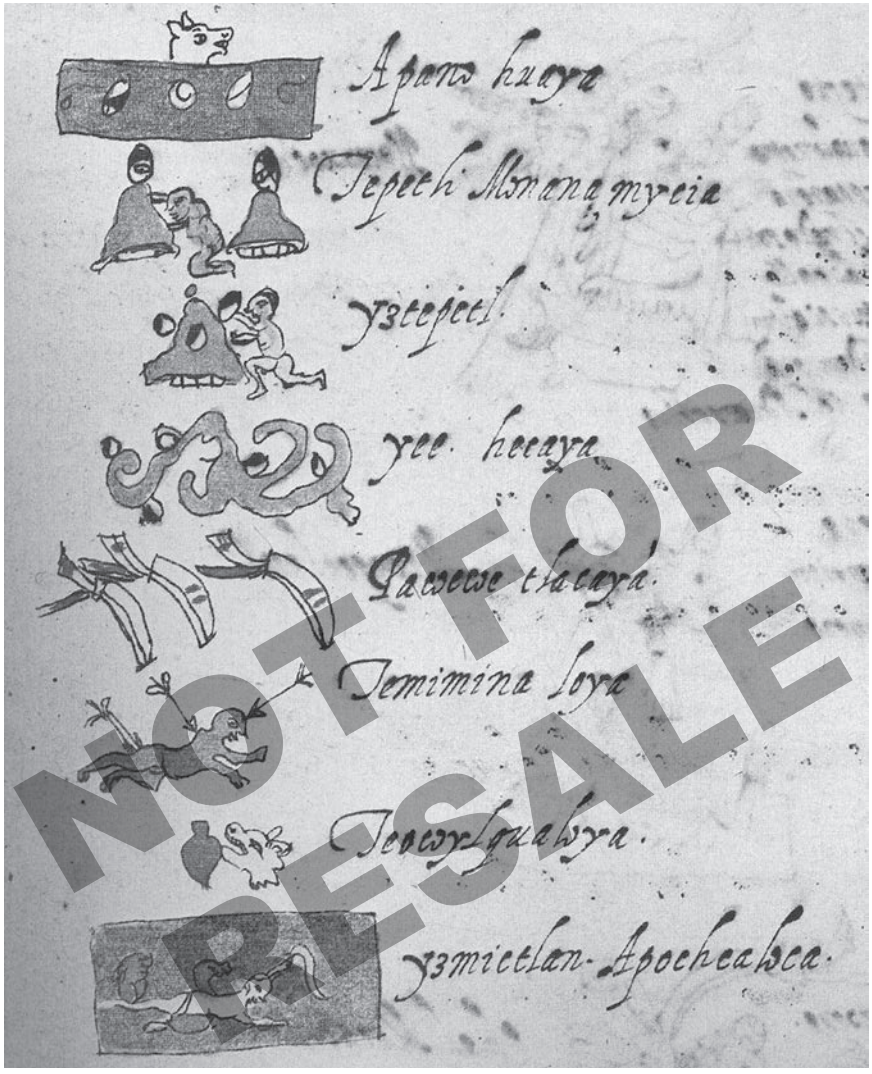

Figure 2.7. *The layers or "dangers" conducting to the Underworld after the Mexica worldview (Códice Vaticano A.3738 1996: 2). Apanohuayan was the uppermost layer. It can be seen as the head of a swimming dog emerging from an aquatic band rendered with snails.*

consonant with the meaning of the monumental entrance that frames the offering and the ritual use given to the area located at the base of the pyramid: the site of cremation and interment of the bodies of the sovereigns of Tenochtitlan.

In sum, the combined use of archaeological, biological, and historical information is revealed as a powerful means to shed light on the relations between the Mexicas and fauna through time. The continued analysis of faunal remains deposited in the offerings in the sacred precinct will help us better understand the technology, economy, politics, and religion of this ancient civilization.

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