

RESEARCH ARTICLE

Primates as Pets in Mexico City: An Assessment of the Species Involved, Source of Origin, and General Aspects of Treatment

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The large human populations in cities are an important source of demand for wildlife pets, including primates, and not much is known about the primate species involved in terms of their general origin, the length of time they are kept as pets, and some of the maintenance problems encountered with their use as pets. We report the results of a survey conducted in Mexico City among primate pet owners, which was aimed at providing some of the above information. We used an ethnographic approach, and pet owners were treated as informants to gain their trust so that we could enter their homes and learn about the life of their primate pets. We surveyed 179 owners of primate pets, which included 12 primate species. Of these, three were native species (*Ateles geoffroyi*, *Alouatta pigra*, and *A. palliata*). The rest were other neotropical primate species not native to Mexico, and some paleotropical species. Spider monkeys and two species of howler monkeys native to Mexico accounted for 67% and 15%, respectively, of the primate cases investigated. The most expensive primate pets were those imported from abroad, while the least expensive were the Mexican species. About 45% of the native primate pets were obtained by their owners in a large market in Mexico City, and the rest were obtained in southern Mexico. Although they can provide companionship for children and adults, primate pets are subject to a number of hazards, some of which put their lives at risk. The demand by city dwellers for primate pets, along with habitat destruction and

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fragmentation, exerts a significant pressure on wild populations in southern Mexico. *Am. J. Primatol.* 61:53–60, 2003. © 2003 Wiley-Liss, Inc.

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INTRODUCTION

As a result of extensive forest destruction in the last five decades, the geographic distribution of the three species of primates native to the rain forests of southern Mexico (*Alouatta palliata*, *A. pigra*, and *Ateles geoffroyi*) has diminished significantly [Estrada & Coates-Estrada, 1984, 1988] and their populations have declined. Some have become locally extinct, while others exist in isolated forest fragments where they live under precarious conditions [Estrada & Coates-Estrada, 1996; Estrada et al., 1999a, b, 2000a]. In some isolated and less populated regions of southern Mexico, populations still exist in protected ecological reserves, national parks, and other protected forests [Estrada, 1982; Estrada et al., 2002b]. Of the three Mexican primates, the spider monkey has been the most rapidly affected by habitat loss and fragmentation [Estrada & Coates-Estrada, 1996] because it requires large areas for habitation. In addition, spider monkeys have traditionally been hunted for their meat, and the attractiveness of the infants as pets has also impacted existing populations [Anderson, 1991; Kinzey, 1997; TRAFFIC, 2003].

Despite concerns about the impact of the pet trade, little is known about it. Large cities in neotropical countries are an important source of demand for wildlife as pets. Therefore, in this work we present the results of a first-time study aimed at assessing the use of primates as pets in Mexico City, determining the primate species involved, and gathering general information about their origin, the length of time they are kept as pets, and some of the maintenance problems encountered with these pets.

METHODS

We used an ethnographic approach, whereby the owners were treated as informants, and a close relationship was developed with the aim of gaining their trust so that we could gather the relevant information. The relative age of a primate pet was estimated from information provided by the owners and by the size of the pet. We classified pets as infants (<12 months old), juveniles (1–2.5 years old), young adults (2.5–3.5 years old), and old adults (>3.5 years old). In addition, we collected information on the gender and age of the owners. We noticed that sometimes the person who purchased the primate pet was not the one who actually kept it, and thus we divided the subjects into those who purchased the pet and those who possessed the pet. Using the ethnographic approach, participant observation allowed us to gather a rich assortment of information on how primate pets are obtained and how they live. Pet owners were located by word of mouth and through the offices of the Mexican government agency in charge of wildlife protection. In the latter case, the owners were unaware of our use of this channel to locate them. Field work in Mexico City, a city of 20 million inhabitants, started in mid 2001 and ended in December 2002.

TABLE I. Species of Primates Used as Pets in Mexico City*

Species	n	%	cost in US dollars ^a
<i>Ateles geoffroyi</i>	121	67	500
<i>Alouatta pigra</i>	18	10	500
<i>Callithrix jacchus</i>	11	6	2,000
<i>Alouatta palliata</i>	10	5	500
<i>Saimiri sciureus</i>	7	4	2,200
<i>Cebus apella</i>	3	3	1,800
<i>Pan troglodytes</i>	2	2	10,000
<i>Cebus capucinus</i>	3	2	1,750
<i>Cercopithecus aethiops</i>	1	1	UND ^b
<i>Cebus albifrons</i>	1	1	1,800
<i>Lemur catta</i>	1	1	UND ^b
Total	179		

*Spider monkeys predominate in the sample, followed by the black howler (*Alouatta pigra*) and the mantled howler (*A. palliata*) monkeys, the three species of primates present in southern Mexico. Primate species from other geographic regions are also used as pets.

^aAlan shown is the relative cost of purchase of the primate pet for each species. Clearly, imported species are more expensive, while the Mexican primates are cheapest.

^bUND, undetermined.

RESULTS

Species Used

We were able to locate and interview 179 owners of primate pets. We found that 12 species of primates were used for this purpose (Table I). Spider monkeys comprised 67% of the cases, while the two howler monkey species native to Mexico—*Alouatta pigra* and *A. palliata*—accounted for 10% and 5% of the cases, respectively. Thus, native species accounted for 82% of the primate pets. Other neotropical species comprised 15%, and those from the paleotropics accounted for the remaining 3% (Table I) of the pets.

Purchasing Costs and General Origin

In terms of cost of acquisition, the most expensive pets were those imported from other countries. Among these, *P. troglodytes* were the most expensive primate pets, followed by *Saimiri sciureus*, *Callithrix jacchus*, and *Cebus* spp. The Mexican species were the least expensive, and the three species were sold for the same price (Table I). Forty-five percent of the pets were purchased in Mexico City at a market known for its wildlife trade. Another 45% were purchased by people traveling to the south of Mexico, and in this case the monkeys came from the states of Campeche (17%), Chiapas (14%), Tabasco (8%), and Quintana Roo (6%). The remaining 10% were imported from abroad.

Age and Sex Distribution of Spider and Black Howler Monkey Pets

In the case of spider monkeys, infants and juveniles accounted for 44% of the cases, young adults for 50%, and old adults for 7%. Males and females were similarly distributed in the sample. For *A. pigra*, 44% of the pets were infants, 22% were juveniles, and 33% were fully grown adults (Table II).

TABLE II. Number of Individuals in Each Age and Sex Class of Spider and Black Howler Monkeys, the Most Frequently Used Native Species as Pets by Residents of Mexico City

Species	Male	Female	Total
<i>A. geoffroyi</i>			
Infants	5	6	11
Juveniles	18	24	42
Young adult	32	28	60
Old adult	6	2	8
Total	61	60	121
<i>A. pigra</i>			
Infants	2	6	8
Juveniles	1	3	4
Adults	1	5	6
Total	4	14	18

Diet

Feeding habits varied greatly from household to household, but in general, the primate pets were provided with fruits and vegetables. They mostly shared the food consumed by the owners, but also consumed other nonfood items. For example, in 88% of the cases in which information was obtained ($n = 57$), the pets drank coffee, and in some cases they regularly ate paper (38%), tobacco (19%), and marihuana (3%). In 14% of cases the primate pet regularly ingested alcohol with the owner.

Common Ailments, Accidents, and Causes of Death

In 57% of the cases for which we were able to obtain data, the most common ailments affecting the general health of the primate pet were of respiratory (33%) and gastrointestinal (24%) origin. Skin and viral infections were reported for 20% of the cases, and in 12% of these the ailments could not be clearly defined by the owners (Table III). Burns caused by hot objects in the household were the most common accidents. Falls, electric shocks, and intoxication by ingestion were reported in 44% of the cases (Table III). The most common causes of death of the primate pet were asphyxiation by strangulation, and electrocution (61% of cases). Being hit by a car or battered by the owner accounted for another 32% of the cases, and attacks by dogs accounted for the remaining 7% (Table III).

Age and Gender of Owners, and Motivation to Own a Primate Pet

Young adults (20–50 years old) accounted for 78% of the people who purchased pets, and adolescents accounted for 22%. Both males and females were buyers of primate pets in all age classes involved (Table IV). Of the people who possessed pets but had not purchased them, 77% were adults, 12% were adolescents, and 10% were children. Females accounted for 60% of the possessors of a primate pet, and there were more females than males in the adult class (Table IV). The most important motivation to own a pet was empathy (55%), followed by possession of a primate pet as a personal object (44%). Least important was acquisition of social status (5%).

TABLE III. *Illnesses, Accidents, and Causes of Death in Primate Pets Kept by Residents of Mexico City*

Problems	Percent
Illnesses (n=97 cases)	
Respiratory	33
Gastrointestinal	24
Skin disorders	16
Viral	14
Others	12
Accidents (n=60 cases)	
Burns	50
Falls	19
Electric shocks	15
Intoxication	10
Cuts	6
Cause of Death (n=41 cases)	
Aphyxia	39
Electrocution	22
Hit by car	21
Owner	11
Attack by dogs	7

TABLE IV. *Age and Sex Distribution of Buyers of Primate Pets and Possessors of Primate Pets in Residents of Mexico City*

	Males	Females	Total
Buyer			
Child	0	0	0
Adolescent	24	15	39
Young adult	95	45	140
Old adult	0	0	0
Total	119	60	179
Possessor*			
Child	10	8	18
Adolescent	12	10	22
Young adult	40	70	110
Old adult	9	20	29
Total	71	108	179

*Those that kept the pet, based on 179 cases.

DISCUSSION

Our study suggests that a relatively high number of primate species are used as pets by inhabitants of Mexico City. Because Mexican law forbids the commercialization of wild primates, and there are no breeding centers in the country, we can assume that all of the native primate pets recorded were obtained on the black market. Our study also showed that the spider monkey was the most affected native primate species. However, howlers are also frequently sold as pets

in small towns or along the highways in southern Mexico (A.E., personal observation). This, and the fact that howlers are much more difficult to keep in captivity, may mask the intensity with which they are being obtained from the wild to be sold as pets. Our >20 years' experience in studying primates in southern Mexico has shown that infants of these three primate species are captured by killing the mother. Many of these captured infants die in transit to the selling location due to lack of adequate food, dehydration, and gastrointestinal and respiratory infections (A.E., personal observations). The pressure on wild populations existing in forest remnants, as well as in protected areas, is high as a result of the desire by city dwellers to own a monkey as a pet.

The low cost of Mexican primates in Mexico City (compared to the other primate species) probably reflects the availability of these species in the country, and the fact that this illegal trade does not incur custom and maintenance costs. Many of the primates brought illegally from southern Mexico land at the "Sonora" market in the city—a market famous for, among other things, trading in wildlife. People go to this market searching for animal pets, and they may find a monkey there. Another source of primate pets in the city are the truckers who move merchandise and produce from southern Mexico to the country's capital. These truckers purchase monkeys on the highways or in small towns where they stop over, and bring them to Mexico City to sell. On a smaller scale are the people who travel to the south for tourism or other reasons and bring back an infant monkey. Exotic primate pets are also obtained through legal and illegal importation of primates into Mexico City via air traffic. Our study showed that even though Mexico City males are the most frequent buyers of primates as pets, females also participate in this process.

Our study suggests that in southern Mexico, capturing primates for the pet trade is mainly carried out in the states of Campeche and Chiapas, which accounted for 69% of the cases regarding native species for which the source of origin was determined. The rest came from states such as Tabasco and Quintana Roo. Campeche and Chiapas are two Mexican states with large rain forests that harbor significant populations of spider and howler monkeys (Barrueta, 2003; Estrada and Coates-Estrada, 1988; Estrada et al., 2002a, b). This indicates that primate infants sold at the Sonora market in Mexico City, or by truckers, most likely come from these general regions in southern Mexico.

Our study showed that the major motivations of people to possess a primate pet are empathy or identification with the animal, the pleasure of owning it as a personal object, and, on a smaller scale, the belief that such ownership will translate into improved social status among relatives, friends, and neighbors. We also observed that in 60% of the cases examined, the primate pet was bought as a gift for other family members, especially as a companion for children or women (who are primarily responsible for the care of the pet). It was also notable that many of the pets were kept into their adulthood, probably because of the attachment to the pet developed by the owner and his/her family. Some primate pet owners who had more than one primate pet over the years indicated to us that as the pet grows older it becomes stronger, more active, and more destructive, and may behave aggressively toward the owner and his/her family. This may lead the owner to get rid of the primate pet by donating it to a zoo or a friend, or by terminating its life.

We observed that in the majority of the cases the primate pet is treated as a member of the family. This involves caring for and dressing it like a child, and treating any illnesses that may arise. However, in many cases the control of the pet's diet is not strict enough or even adequate, and the pet ingests substances

(e.g., alcohol, paper, or other items) that can have a deleterious effect on its health. The high frequency of respiratory illnesses in the primate pet population studied may be related to regular drops in ambient temperature in Mexico City, which is located at 2,200 m above sea level. Many of these pets are kept outdoors, either on the roofs of houses or tied to a structure in the yard, and are thus exposed to the elements. Gastrointestinal problems may result from inadequate diet or contaminated food. A poor diet, insufficient exposure to the sun, and mycosis may be responsible for the high incidence of skin problems reported. Viral and bacterial infections may also result from contact with humans.

Because the majority of primate pets are brought into the owner's house, they are prone to accidents with objects used by humans. Burns caused by stoves, irons, light bulbs, and candles are quite common. When the owners live on the second floor or higher in apartment buildings, falls are common. Slippery floors also cause some of these falls. Electric shocks result when the pet comes into contact with exposed electrical cables and connections. Intoxication can be caused by the ingestion of cleaning products, such as solvents, or ornamental plants. We observed that primate pets also suffered many skin cuts caused by sharp objects, such as knives and broken glass, and by aluminum containers offered to them with liquid to drink.

The major cause of death is strangulation caused by the rope tied around the monkey's neck. The rope may become tangled in house structures or trees without the owners being aware of it. Death by electrocution can result when the monkey climbs to high-energy electric lines or transformers in the street during a momentary escape from the house. This latter behavior may also result in the monkey being hit by a car or attacked by dogs. In other instances, the owners killed the primate pet because they considered it unmanageable because of its size or behavior, but generally this occurred after an aggressive episode directed toward a member of the family.

We cannot report the total number of primate pets in Mexico City, but we did find more pets than we expected. This suggests that the pet trade is an important problem in the preservation of wild populations. Furthermore, once they become a pet the young primates face a multitude of problems and are subjected to many risks while they are pets. While they provide companionship and entertainment for a few months or years for the owners and their families, their final fate is uncertain. The demand for young spider and howler monkeys as pets, together with habitat disappearance and fragmentation, exerts a significant pressure on wild populations. This means we need to find ways to mitigate these pressures by making it undesirable to own a monkey as a pet, tracking down the people who capture and market the infants, and confiscating the primates being sold, among other measures. We must also provide information to the owners of primate pets to improve the living conditions of these animals, and to minimize the risk of injuries and unwanted deaths. Of course, the problem of rehabilitating the pet once they become unwanted by the owners is another difficult issue that remains to be resolved [Morell, 1994].

We are aware that our study is by no means complete and our sample size was small, both of which reflect the fact that it was difficult to locate primate pet owners in Mexico City, and the acquisition of information required a considerable investment of time to gain the owners' trust. However, our efforts show that the use of an ethnographic approach (whereby the pet owner is approached as an informant) is a productive avenue for gathering information about the use of primates as pets, the species involved, the regions of origin, the market place

where they are sold and bought, the general market value of the pets, and other aspects related to the management of primates as pets.

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