

## ***Alouatta*, *Ateles*, and the ancient Mesoamerican cultures**

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**Summary** – *The howler monkeys (Alouatta spp.) and spider monkeys (Ateles spp.) are the only living Platyrrhines in Mexico. Primates have always had a major ethnozoological role within the symbolic sphere of animistic societies, often identified with human qualities or gods in paintings or other artistic products. Alouatta is a very distinctive taxon by reason of its peculiar morphology and behavior; nevertheless, it is scarcely represented in Mesoamerican native iconography. In contrast, Ateles is more tamable and versatile, whether as game or pet; it is preferentially represented in Mesoamerican productions, as well as in some Antillean findings and South American cultures. Mayas used to figure monkeys as symbols of intelligence, spirit, arts, luxury, fecundity, and immortality. In Mayan cosmology, Alouatta and Ateles were the early and failed human attempt. Even considering the frequent iconographic stylization of the spider monkeys as a consequence of its resistance to anthropic perturbations, the absence of Alouatta in the symbolic sphere deserves attention, especially taking into account the evocative potentialities of this genus.*

**Keywords** – *Atelids, Ethnozoology, Maya cosmogony, Mexico.*

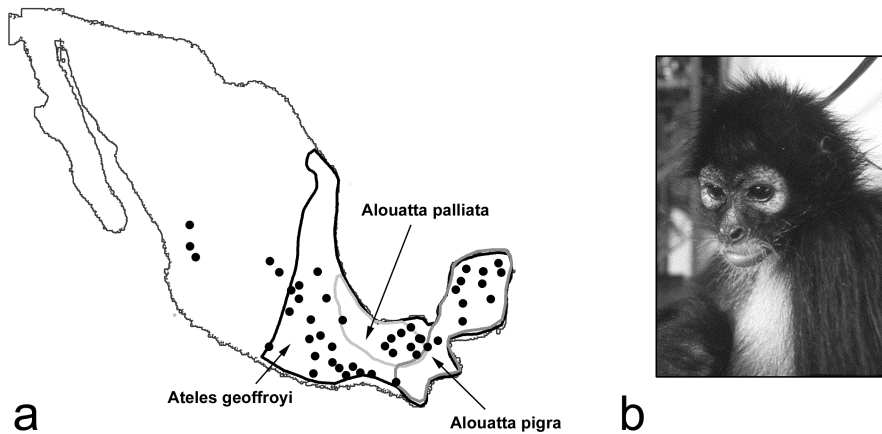
### **The Mexican Primates**

Animistic societies generally display a large percentage of zoomorphic iconography related to symbols, concepts, or religion. From this perspective, primates have received much interest and attention because of their complex behaviour and of their similarities with humans in both morphology and attitudes. The Mesoamerican Prehispanic complex cultural systems covered a time span of some 3,000 thousand years, from the Olmecs (1,300-400 B.C.) to the Aztecs (1,200-1,500 AD). These societies developed at the northernmost borderline of the distribution of living nonhuman primates, which encompasses the Mexican Lowlands.

Atelids are the only living taxa of the Mexican primatological fauna (Fig. 1 - Starker Leopold, 2000; Groves, 2001), and it is represented by the

genera *Alouatta* (howler monkeys) and *Ateles* (spider monkeys). Within the genus *Alouatta* (*Alouattinae*) two species can be identified in the region: *A. palliata* (Gray, 1849) in the north of Chiapas, Vera Cruz, and Tabasco, and *A. pigra* Lawrence, 1933 in southern Chiapas and Yucatan. *Ateles* (*Atelinae*) is known in Mexico only with the species *A. geoffroyi* Kuhl, 1820, ranging from the Mexican northeastern areas (Tamaulipas) to Panama.

Although the social system is rather variable in howlers, groups generally include one adult male with several females and offsprings (Fleagle, 1988). In contrast, *Ateles* displays a fission-fusion society, with large groups and smaller foraging units. Both live within the forest environment, but *Ateles* is generally more tolerant towards habitat changes and anthropic disturbance. Both *Alouatta* and *Ateles* are hunted for their meat, the



**Fig. 1 - a) geographical distribution of *Alouatta* and *Ateles* in Mexico. Points show the major Mesoamerican archeological sites; b) *A. geoffroyi* (photo by E. Bruner).**

latter being quite valuable. Actually, the hunting of spider monkeys is considered to have a negative impact on its population's size in some areas of South America (Defler, 2003). Nevertheless, all these species show rather stable populations and, with the possible exception of some subspecies of *A. geoffroyi*, they are not yet included in the threatened categories of the IUCN Red List (Gippoliti & Visalberghi, 2001).

*Alouatta* displays a set of characters that make it rather peculiar when compared to other genera of the Atelidae. Howlers show a visible sexual dimorphism (Martin, 1990), with males larger and "bearded", and are characterised by a set of peculiarities that distinguish the genus from all the other Platyrrhines. The cranial morphology is unusual, because of the rotation of the splanchnocranium onto the neurocranial axis, or *airorhynchy* (Osman Hill, 1962; Bruner *et al.*, 2004; see Fig. 2). This rotation allows a marked expansion of the mandibular ramus, and consequent large masseter muscle involved in massive chewing, which is related to the marked dietary specialization toward folivory. The same process allows the hypertrophic hyoid bone to develop between the two rami, forming large vocal sacs (Schon, 1971). These vocal sacs (which account for the name of "howlers") strongly influence the social structure through the production of powerful calls, that are conspicuous

features of the forest landscape. Interestingly, the same evolutionary network between cranial morphology (*airorhynchy*), diet (masseter development), and society (vocalization) was described in *Pongo pygmaeus* (Shea, 1985).

In the howler monkeys, *airorhynchy* also influences the position of the foramen magnum, which is shifted posteriorly and rotated, involving a typical front-headed posture. Finally, *Alouatta* has evolved a trichromatic vision, independently from Catarrhines (Jacobs, 2004).

This paper reports some comments on the presence of *Alouatta* and *Ateles* within the iconography of the Mesoamerican cultures, with the intent to assess the relationship between the pre-Columbian societies and these large Platyrrhines.

### Mesoamerican primatomorphic iconography

In the Amerindian cultures (as in many theocratic and animistic societies), the zoomorphic component has a large influence on symbolism. In the native Mexican representations, the presence of monkeys is a regular feature, even if at first glance it does not seem more frequent than images of other taxonomic groups.

Considering the singular features of *Alouatta* (evocative vocalizations, typical exterior aspect,

particular locomotion) one might expect it to have an important ethnozoological value compared with *Ateles*. On the contrary, the stylized features of *Ateles*, such as long legs and arms, small body (slim thorax, rounded abdomen), bipedal attitude, suspended and long tail, small head, muzzle reduction, facial and periorbital mask, predominate among the images available in the many anthropological museums and collections (paintings, ceramics - Figs. 3 and 4).

Interestingly, we can find a similar situation also in the Antilles. Although the subfossil record suggests the presence of *Alouatta*-like monkeys (e.g. *Paralouatta varonai*; Rivero & Arredondo, 1991; Horovitz & McPhee, 1999), a Cuban cave painting at the Cueva Ciclon (Preagoalfearera Culture) clearly shows the traits of spider monkeys (Arredondo & Varona, 1983 - Fig. 5). *Ateles* is not part of the living and fossil Antillean fauna, suggesting an early primates trade from Meso and South America to the Caribbean islands. Also in South America *Ateles* seems to have greater ethnozoological value (Defler, 2003).

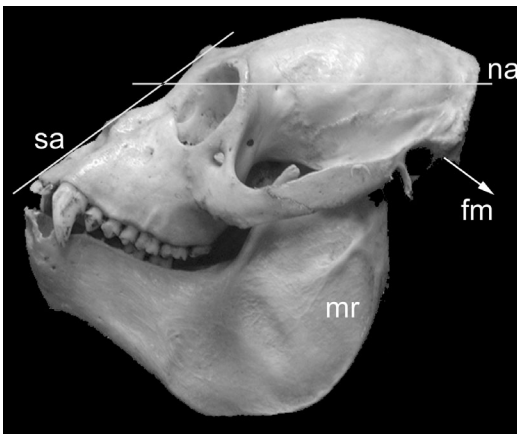
In the ancient New World cosmogony, non-human primates were depicted as the material representation of the “infamous” state of human beings. They were humans transformed into monkeys as punishment for malignant actions committed during their terrestrial lives. Alternatively, they were originally humans who

had found shelter on the top of the high canopy forest to escape from the Great Flood (Hunt, 1977; Benson, 1994).

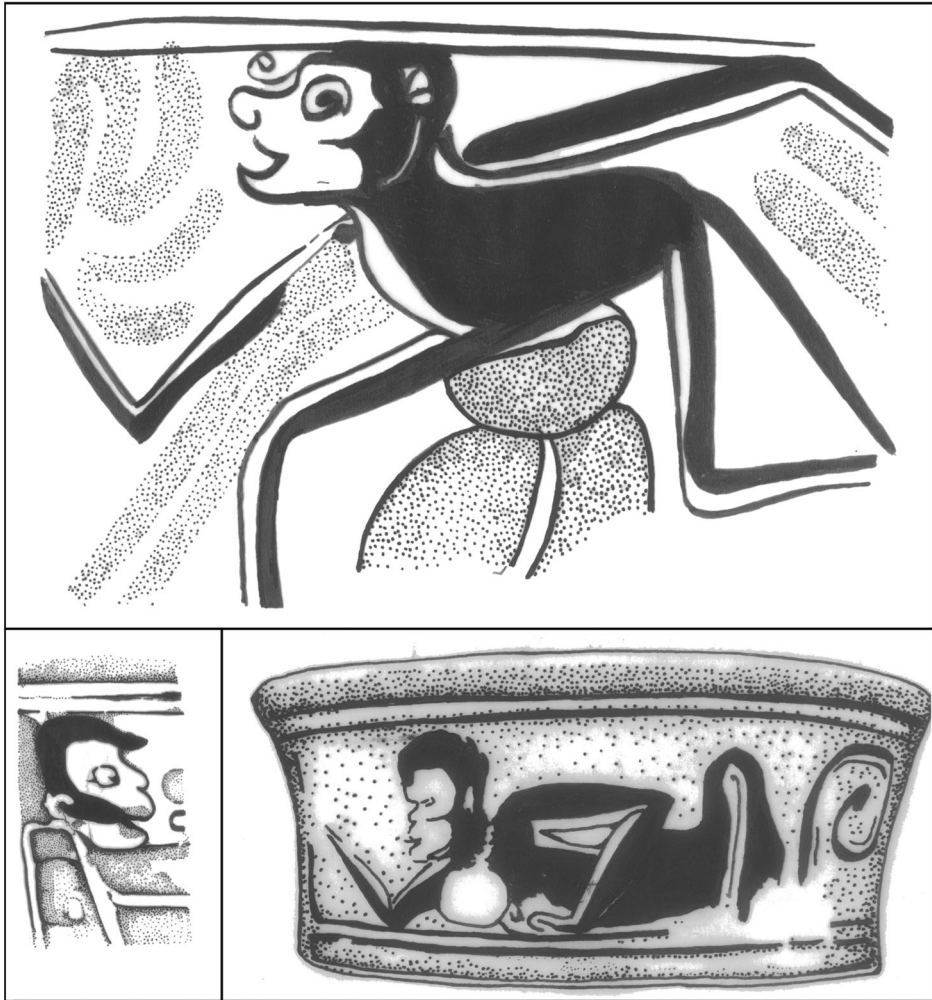
In the *Popol Vuh*, the Quiché Maya sacred book of cosmogony, monkeys were the product of the Gods’ second attempt at creation. During the first creation, Gods shaped humans out of wood, just to realize that such a product could neither speak nor move, so they eventually destroyed them. Monkeys resulted from the second try. They could move, they were morphologically similar to humans but still lacked the ability to speak. Their inferiority is evident in the *Popol Vuh*. Hunbatz and Hunchouen are respectively the howler monkey and the spider monkey. They were the older brothers of the Hero Twins, whose intelligence, skills and wisdom allowed them to defeat the Gods of death and darkness. It was only after the Hero Twins brought to the earth the light of wisdom and knowledge that the Gods created humanity because only now they (the humans) possessed a brain to think and reason. Hunbatz and Hunchouen were extremely jealous of their younger brothers and always tried unsuccessfully to destroy them. The Hero Twins got their revenge over their older brothers when they convinced them to climb up a magic tree. Once the older brothers were at the top, the magic tree started growing. Hunbatz and Hunchouen were thus trapped higher and higher in the canopy and ended up turning into monkeys (Goetz & Morley, 1950).

The Hero Twins represent the new, superior and better evolved generation while their older brothers symbolize the ancient ones. Nonetheless, when Hunbatz and Hunchouen were still in their human form, they were amazing singers and dancers, painters and sculptors, as well as jewelers. They might have originated the dance and the arts. In Mayan mythology, monkeys appear in various contexts. Monkeys or monkey-like creatures are often depicted in underworld scenes even though their natural world is well above the surface. This could be linked to their ancestral state of pre- or proto-human creatures.

No doubt, the qualities and abilities possessed by the older brothers are present also in the monkeys. Hunchouen and Hunbatz were great singers and orators, sculptors in high and low relief, writers of hieroglyphs and in all



**Fig. 2 - cranium and mandible in *Alouatta*; na: neurocranial axis; sa: splanchnocranial axis; mr: mandibular ramus; fm: foramen magnum opening.**



**Fig. 3 - paintings on Mayan ceramics. The limb proportions, the facial mask, and the chromatic pattern clearly identify the monkeys as Ateles. The (spider) monkey is depicted as the patron and protector of scribes (drawing by Mirna Sánchez of unspecified Classic period Maya ceramics).**

respects extremely wise (Thompson, 1960). In the Maya dictionary, *Batz'* stands for howling monkey, while *Chuen* and *Chouen* can be translated as craftsman. Monkeys are eclectic, very capable, dextrous and joyful animals, the spider monkey more so than the howler monkey. In their nature, monkeys can be provocative and decidedly un-respectful, and do things like throwing objects at humans. Clowns dressed like monkeys still act in local Maya festivals, dancing and acting

frivolously and licentiously. They are allowed to do what humans cannot do.

It is not strange that monkeys have been associated with the arts and with craftsmanship, as their Maya names indicate. They are free from moral or cultural constrictions. Their association with arts and artistic behaviors reflects the frivolousness and licentious connotation that is linked to artistic talent. The artist is usually "free" from social restrictions, free and open to explore



**Fig. 4 - cabeza de mono (monkey's head).** The traits typical of spider monkeys (periorbital mask, large orbital areas, reduced muzzle) are instantly recognizable (photo by A. Cucina, printed by permission of Fabiola Sánchez and Ian Hollingshead Roome, Na Bolom Museum, San Cristobal de las Casas, Chiapas, Mexico).

the creativity without bonds that limit his imagination and lash him to the set of rules established for the “normal” beings. The artist, like the monkey, can do what the others will not. In this sense, the figure of the monkey that prevails in the iconography and epigraphic representations is the spider monkey, because it seems to be impersonating such histrionic attitudes.

In Central Mexico the spider monkey was known as *ozomatli* (the same as *Chuen* in Maya) and its sign is associated with the 11<sup>th</sup> day. Those born in this day are thought to be lucky, friendly and happy persons and would likely be singers or dancers (Thompson, 1960). In Mayan symbolism, the Sun God is the patron of the arts, poetry and music, as well as procreation, and it is entirely appropriate that sometimes a monkey serves as symbol of the sun (Thompson, 1960).

### **Ethnozoological considerations on the Atelids**

*Alouatta* shows a set of traits that are unique in the neotropical primatological context. A traditional South American tale from the Amazon

tells the way a howler monkey discovered maize and its cultivation (Gatto Chanu, 1996). Nevertheless, Amerindian cultures have mostly relied upon the spider monkeys for their zoomorphic representations, even if the two genera are equivalent in the Mayan tales of human genesis. Spider monkeys have more plastic biological responses compared to howlers, both in terms of ecology and behavior. Furthermore, their meat is more refined. Finally, their extreme locomotor abilities, their dexterity, as well as their bipedal attitudes, probably have had a further role in the processes of cultural imagery. It may be argued whether or not the fission-fusion organization could be related to a more plastic social behavior. Spider monkeys are, and probably have been, commonly used as pets since the early human contacts, while howlers may be more difficult to rear in captivity also because of their more specialized diet. Frida Khalo's wonderful “self-portraits with monkeys” synthesize a long-standing relationship between Mesoamerican people and spider monkeys. These conditions explain the prominence of *Ateles* in the ethnozoological context, but not the almost complete absence of *Alouatta*, with all its clear



**Fig. 5 - Cave painting at the Cueva Ciclòn, Cuba, stylizing the general features of *Ateles* (long arms and legs, slim body, small head, bipedal posture); redrawn after Arredondo and Varona, 1983.**

evocative potentialities. There is little information on possible past fluctuations in the howlers' areal extension/reduction, but the presence of this genus in Central America is certainly long established (Cortes-Ortiz *et al.*, 2002; Hartwig & Meldrum, 2002).

Many animistic societies have “fear species”, that is categories of animals representing negative attitudes. It can be hypothesized that, because of their loud earth-shattering voices, howler monkeys might inspire negative feelings, which might explain the lower ethnozoological representation

(I. Farrington, *pers. comm.*). Accordingly, the Hero Twins will stand in structural opposition to each other: the intelligent humanlike one with flexible behaviour (*Ateles*), and its opposite (*Alouatta*). Actually, many cosmogonies describe reality as the product of antagonist forces, where the opposites are different expressions of the same nature.

Of course, it must be kept in mind that the relationships between Amerindian cultures and atelids can be culture-specific, and the heterogeneity of the Meso and South American human groups can support very different interpretations. An interesting example comes from the South American shrunken heads, or “tsantsas”. The soft head tissues of the enemies (often males and warriors) were treated in some groups such as to reproduce miniaturized trophies, with the aim of capturing powers and energies from the dead individuals. Sometimes, for practical or kinship reasons, sloths or monkeys were used instead of human heads. There is at least one known case (collected at the Oxford Pitt Rivers Museum - EB *pers. comm.*) in which one *Alouatta* head was used to create a tsantsa. The specimen was collected in 1936 by Major Ronald Hawksby Thomas on the Pastaza River, Ecuador, from Jivaro indians.

Any interpretation of the relationships between the ancient Mesoamerican population and the atelids will require a culture-specific quantification of the iconographic sources, to attest chronological trends and local reports. Considering the pattern described for the two Mexican genera of primates with the clear underrepresentation of the howler monkeys, attention must be paid to hypotheses that often relate particularly evocative zoological taxa with taboos that influence and limit the iconographic tradition (G.M. Carpaneto, *pers. comm.*).

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