

# COMPLEX OBJECT MANIPULATION BY AZARA'S CAPUCHINS (*SAPAJUS CAY*).

Smith, R. L. Fundación Para La Tierra



Capuchin monkeys have long been famed for their abilities to open hard fruits by smashing them against solid substrates (Struhsaker, 1977). The Azara's capuchins (*Sapajus cay*) of Reserva Natural Laguna Blanca have been observed hammering fruits of the tree Ka'i Ka'Ygua (*Cariniana estrellensis*) to extract the internal seed. Though fruit smashing is not as complex a behaviour as the use of hammer stones (Ottoni & Izar, 2007; Canale et al, 2009), it is thought to be a higher-level adaptation of the capuchins to their environment. This unique behaviour is hypothesized to contribute to the success of capuchins in areas where other primates would struggle to survive (Izar, 1977).

Figure 2: Adult capuchin extracting seed from fruit casing.



## Ka'i Ka'Ygua (*Cariniana estrellensis*)

*Cariniana* is a genus of trees in the family Lecythidaceae and is native to South America. *Cariniana estrellensis* is the only species known in Paraguay. It is an emergent tree that can reach up to 40m in height (Chagas et al, 2000).



Figure 4: Juvenile capuchin begging for fruit from an adult.

Figure 1: Juvenile capuchin rolling fruit against trunk.



## Fruit Smashing Techniques

In Laguna Blanca, adult monkeys display two different techniques of hitting the *Cariniana estrellensis* fruit against the tree: 1) holding the fruit with both hands, standing bipedally and using the entire body weight to strike the fruit against the tree branch. Remaining crouched low to the branch, the monkey quickly follows this first strike with a second strike using only one hand and hitting the top end of the fruit on the tree trunk. The individual is then able to hold the fruit in its left hand, while using the index finger and thumb of the right hand to extract the seed from the hard casing; 2) holding onto the branch with its left hand and using the right hand to strike the fruit against the branch a number of times in rapid succession. Using both hands to hold the fruit, the subject uses its teeth to extract the seed from the casing.



Figure 3: Smashed fruit of *Cariniana estrellensis*.

## Age Differences in Ability

Complex object manipulation in primates appears to be a learned behaviour (Ottoni & Izar, 2007). Younger capuchins are not as adept at opening fruits. The younger monkeys roll the fruit, only infrequently striking the branch. Sitting low to the branch, the capuchins place the oblong-shaped fruit on the branch with both hands on top. Moving their hands back and forwards they roll the fruit repeatedly. This has never been observed to be a successful method for Laguna Blanca's capuchins.