

Title	<Note> Two Observations of Galago Predation by the Kasakela Chimpanzees of Gombe Stream National Park, Tanzania
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<NOTE>**Two Observations of Galago Predation by the Kasakela Chimpanzees of Gombe Stream National Park, Tanzania.***Robert C. O'Malley**Department of Biological Sciences, University of Southern California, USA
(E-mail: romalley@usc.edu)***INTRODUCTION**

Chimpanzees (*Pan troglodytes*) are known to prey on a variety of vertebrate prey across Africa¹. By a wide margin, the most common prey for the Kasakela chimpanzees of Gombe Stream National Park, Tanzania are red colobus monkeys (*Colobus badius*), followed by bushpig piglets (*Potamochoerus larvatus**), bushbuck fawns (*Tragelaphus scriptus*) and young baboons (*Papio anubis*). Members of this community have occasionally been observed to capture and consume blue monkeys (*Cercopithecus mitis*) and red-tailed monkeys (*Cercopithecus ascanius*) as well as smaller mammals and birds².

In five decades of observation there have been no published reports of Gombe chimpanzees consuming galagos, though at least three species (*Otolemur crassicaudatus monteiri*, *Galago matschiei*, and *Galago senegalensis*³) are believed to be endemic to the park (Collins personal communication). Predation on galagos by chimpanzees has been observed (rarely) in the chimpanzees of the Mahale Mountains in Tanzania^{4,5}. Galago remains were identified from chimpanzee fecal samples at Mt. Assirik, Senegal⁶ and galago predation is regularly observed by chimpanzees at Fongoli⁷, also in Senegal. Chimpanzees in the latter population usually (though not always) use long sticks to assist in capturing

galagos from their nests in hollow trees or other cavities. Blue monkeys (*Cercopithecus mitis*) have been observed to prey on galagos in the Kibale Forest of Uganda⁸, though chimpanzees there have not been reported to do so.

In this report I document two recent observations of predation on galagos by chimpanzees of Gombe Stream National Park, Tanzania.

OBSERVATION #1:*February 21, 2008, 13:15.*

While following a mixed party of chimpanzees, I observed a 15-year old male (Zeus) visually investigating an upright dead tree trunk. After a few seconds he began systematically breaking off bark and wood around the tree bole with both hands, occasionally reaching down into the hollow log. After approximately 2 min of this activity, he successfully retrieved an adult galago (not conclusively identified, but probably *Galago senegalensis* based on body size) from the trunk. Zeus immediately killed it with a bite to the face, then quickly and quietly moved to a nearby tree and began consuming it.

Zeus' activities were closely observed by several juveniles in the party (including his 9-year old sister, Zella), some of whom investigated the hole after he had moved away. One juvenile (ID unknown) retrieved what seemed to be a large piece of loose fur or bedding material from the hole after Zeus had moved away, but discarded it after smelling it. None of the adults present showed any interest in Zeus' activities.

The majority of the group were resting and grooming while Zeus captured the galago. Zeus consumed the entire carcass without interference or apparent interest by other adults in the party over the next 90 min. The juveniles in the party watched Zeus closely but none approached closer than 3 m or attempted to beg for meat.

OBSERVATION #2*October 21, 2009, 15:25.*

While following a large mixed party from a feeding session in a mango stand, Zella (now 10 years old) appeared with the freshly-killed body of a galago (*Galago senegalensis*). The actual predation event was not observed, though several pairs of human observers were present. Zella carried the galago in her mouth, occasionally stopping and tearing at the skin with her teeth (Figure 1). The flesh had already been stripped from the galago's tail and its gastrointestinal tract was hanging free. I observed her successfully bite off the left hind leg and begin to consume it. She was briefly approached by Fundi (9-year old male) who watched from <1 m away but did not attempt to beg for meat or steal the carcass, and who soon moved off.

Less than 3 minutes after appearing with the galago, Zella abandoned the carcass on a trail (Figure 2), directly in the path of two approaching adults and continued on with the group. Both Frodo (33-year old adult male) and Gremlin (39-year old adult female) stepped directly over the carcass with no hesitation or interest whatsoever. Following behind his mother Gremlin, Gimli (5-year old male) immediately seized the carcass and flung it over his shoulder as he continued after her. The group traveled



Figure 1: A 10-year old female (Zella) chews off the hindlimb of a captured galago.

for several minutes before resting along a stream. Several other immature chimpanzees, including Zella, approached to observe Gimli with the carcass. None attempted to take it from him, nor did any adults in the group show any interest in the galago. Gimli interacted with the galago's body for at least an hour. This included tossing it in the air, flailing it about with one hand, chewing on it, and grooming it. He made no real progress in removing skin from the carcass and did not seem to be able to extract very much flesh. By 17:30 Gimli no longer carried the carcass, nor were any other group members seen carrying it.

DISCUSSION

These are the first published observations of predation on galagos by the chimpanzees of Gombe Stream National Park, though observation of the Kasakela community has been underway for five decades. Predation on galagos appears to be a rare behavior in this community, with only two events observed over ~10 months of observation (1608.5 contact hours). In contrast, red colobus hunts were observed up to several times a week during this same period (O'Malley unpublished data).

No tool use was seen during either observation. Pruetz and Bertolani⁷ reported that enlargement of the cavity opening in a manner similar to Zeus' technique in Observation #1 was a component of tool-assisted predation on galagos by Fongoli chimpanzees. I made no on-site estimate of the initial depth or width of the cavity during Observation #1, though a *post-hoc* estimate of at least 120 cm deep and 10 cm wide is likely given that Zeus was initially able to insert his entire arm into the cavity but was unable to retrieve the galago. At Gombe, predation on galagos does not require the use of tools.

The lack of interest in Zeus' hunting behavior in Observation #1 could simply mean that the other adults did not notice his activity. However, the complete lack of

interest in a freshly killed galago in Observation #2 by the adult chimpanzees (including the community's most avid and proficient hunter, Frodo) suggests that galagos are not considered high-value prey by mature Kasakela chimpanzees. I have seen a similar lack of adult interest in 'unusual' prey when immature chimpanzees at Gombe have captured other small animals such as birds or frogs (O'Malley personal observation). At Mahale, Nishida⁴ reported a similar lack of interest by other party members to a galago apparently killed and then partially eaten by an adolescent male. Though Gombe chimpanzees will take freshly killed prey from baboons⁹, in general chimpanzees scavenge very rarely¹⁰. A dead animal of unknown provenance may simply not appeal to chimpanzees even if freshly killed.

Zeus showed no apparent hesitation in acquiring, dispatching, and consuming the galago in Observation #1. Based on his confidence and proficiency, I think it is unlikely that this was the first time he had ever captured one. The actual predation event in Observation #2 was not observed. In contrast to Zeus, both Zella and Gimli appeared keenly interested in the galago but somewhat hesitant and uncertain in what to do with it. Zella's abandonment of the carcass after only consuming part of the tail and one limb might mean that galago flesh is less palatable than that of red colobus, or at least that it has an unappealing smell and/or taste. Consistent with this hypothesis, Pruetz (personal communication) has observed a male Fongoli chimpanzee that had successfully captured and begun consuming a galago discard it after sniffing the galago's genital region. The carcass was then claimed and consumed by a juvenile.

It is notable that the known and suspected galago predators (Zeus and Zella, respectively) are brother and sister. Zella was present during Zeus' successful capture in 2008. Interestingly, their mother Trezia (an immigrant from the Mitumba community to the north) appears to have introduced tool-assisted predation on *Camponotus* ants to Kasakela in the 1990's¹¹. This insectivorous behavior had been completely absent during the early decades of research on the Kasakela community² but is now seen in a majority of the current community. At Gombe, predation



Figure 2: The galago after being partially consumed and then abandoned by Zella. It was claimed by Gimli (a 5-year old male) a few seconds after this photo was taken.

on galagos has (thus far) been observed only in a single immigrant matriline of the Kasakela community.

Red colobus, the prey of choice for many chimpanzee populations in East Africa, are not present at either Assirik or Fongoli where predation on galagos appears to be more common than elsewhere. McGrew⁶ hypothesized that chimpanzees at Mt. Assirik may face steep competition from other predators for most potential vertebrate prey (both primate and otherwise) within their range and so seek out arboreal, nocturnal prosimians as an alternative. The absence of red colobus at Fongoli may explain why galagos and other unusual prey such as mongoose¹², vervet monkeys¹³ and patas monkeys¹⁴ are consumed by chimpanzees there. The small size and nocturnal activity cycle of galagos may explain why they are consumed only rarely by chimpanzees of Kasakela and in the Mahale Mountains, given the availability of large, non-cryptic, diurnal prey such as red colobus.

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* EDITORIAL NOTE:

PAN editors adopted the new trend in classification of the genus *Potamochoerus*, where there are two wild pig species: *P. porcus* (red river hog) and *P. larvatus* (bushpig), though the majority of researchers studying Eastern chimpanzees have followed a classic way of classifying bushpigs as *P. porcus*. Bushpigs (*P. larvatus*) are distributed mainly in East Africa, while red river hogs are distributed through the West and Central African rainforest belt (Wilson & Reeder 2005).

Wilson DE, Reeder DM (eds) 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference (3rd ed)*. Johns Hopkins University Press, Baltimore.