

**First Record of Plesiadapiformes (Primates, Mammalia) from Spain by: Sergio López Torres**

The importance of the study of plesiadapiforms is based on the unique position that these animals occupy within the framework of primate evolution. Plesiadapiforms form the evolutionary basal group of Primates and the link to the rest of Euarchonta (the group that also includes tree shrews and flying lemurs). Therefore, they represent the key group to define Primates as an order. Plesiadapiforms were a group of early primates considerably widespread during the geologic epochs of the Paleocene and the Eocene, between 65 and 37 million years ago. It was a very successful group; its broad range of adaptations resulted in a broad evolutionary diversification that allowed them to colonize North America, Europe, and Asia. Present conceptions of Plesiadapiformes include eleven different families (as in Silcox & Gunnell, 2008). One of these families is the focus of attention of this work: the Paromomyidae. New material of a Paromomyidae from the lower Eocene of northeastern Iberian Peninsula is described. *Arcius* sp. is based on four isolated teeth found in the Masia de l'Hereuet fossil site (Lleida, Spain). This is the first record of a plesiadapiform ever found in Spain. *Arcius* sp. shows many similarities to the other species of the same genus, especially to *A. lapparenti* from the French early Eocene. However, a specific determination of the studied material is impossible due to its scarcity.

**Injured Not Sick by: Walter Callaghan**

In the context of the Canadian Forces, the perception towards and acceptance of injuries differs greatly from the perception of "being sick". While these two terms, injury and illness, are normally used in the context of physical health, the role that such terms play on perceptions of mental health (or mental illness) should not be ignored. This presentation will examine the predominant biomedical and psychiatric definitions of "mental illness", and how these conceptual definitions adversely affect the treatment-seeking behaviour of soldiers. The question of what constitutes an Operational Stress Injury, and which psychiatric DSM-IVr diagnoses are included within the common definition will be discussed. Finally, how treatment policies are affected by the psychiatric/biomedical definitions of health and illness, including differences between pharmacotherapy and other treatment protocols (such as Virtual Reality Exposure Therapy and Cognitive Behaviour Therapy), will be addressed with attention paid to the inclusion or exclusion of specific diagnoses and the harm caused by misdiagnosis.



**Evidence of Complexity Among Prehistoric Hunter-Gatherer's on the South African Coast by: Gillian Sloggett**

Excavations of occupation sites and burial complexes along the coast of South Africa have yielded evidence of complex cultural practices in the area between ~4500 and ~2000 BP. This time period is bounded on one end by environmental changes, and on the other by changes in subsistence practices. Data suggests relative complexity in mortuary practices, subsistence practices, settlement and territoriality, and trade during this period. In this presentation, evidence for such complexity is evaluated, and areas in which complexity appears absent (art, craft specialization, etc.) are discussed. Ultimately, it is determined that despite archaeological markers which suggest complexity, it is unlikely that prehistoric hunter-gatherers along the South African coast developed complex societies.

# MEDUSA

## ANTHROPOLOGY GRADUATE STUDENT UNION

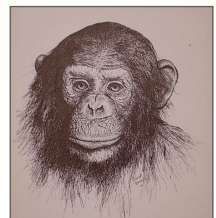
WELCOME TO THE AGSU FIRST 2011/12 MEDUSA CONFERENCE (BIOLOGICAL ANTHROPOLOGY/ BIOLOGICAL ARCHAEOLOGY)

Hosted by Cadell Last and Amber Walker-Bolton  
Today's Presenters (in order of presentation)

Walter Callaghan (Biomedical Anthropology)  
Gillian Sloggett (Bioarchaeology)  
Sergio López Torres (Bioarchaeology)  
Karyne Rabey (Primatology)  
Ryan Burke (Primatology)  
Amber Walker-Bolton (Primatology)  
Cadell Last (Primatology)  
Iulia Badescu (Primatology)

### AGENDA

The first Medusa Conference of the 2011/12 academic year is focused on biological anthropological and biological archaeological topics. The presentations cover issues related to understanding mental health, prehistoric hunter-gatherers, early primates, and primate morphology, behaviour and ecology.



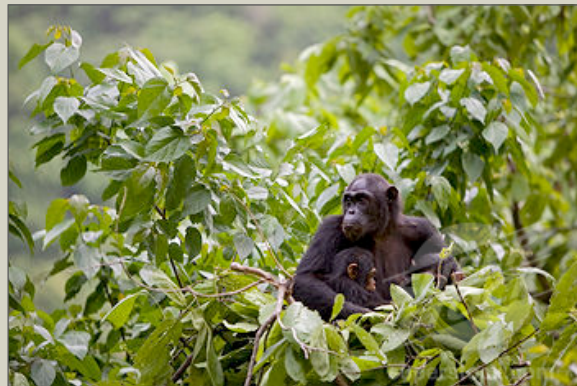


## Finding a Home: Effects of human predation on chimpanzee nest construction in the Lebialem Highlands of Cameroon by Cadell Last

In several areas of Africa, great apes experience increasing predation pressure as a result of human activities. In this study, terrestrial and arboreal nest



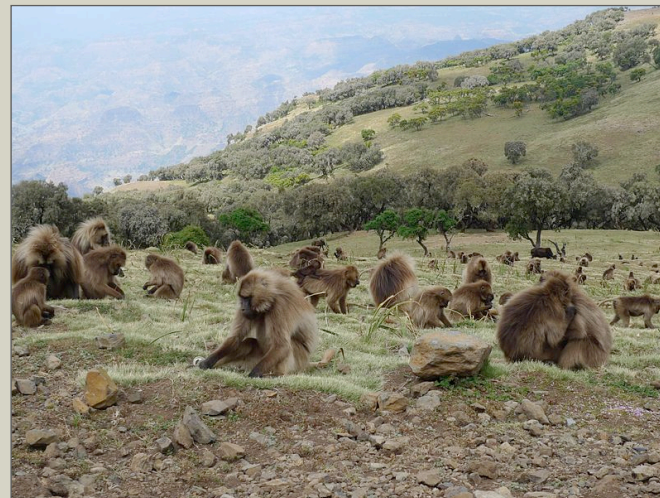
construction among chimpanzee (*Pan troglodytes ellioti*) populations was investigated in the Lebialem-Mone Forest Landscape (LMFL) of Cameroon to test the anthropogenic, environmental and social effects on chimpanzee night nesting. Data on the material composition, height, distribution, organization, approximate age, diameter and function of chimpanzee night nests were collected during two four-week primate field surveys (July-August 2010; July 2011) at two field sites (Bechati and Andu) within the



LMFL. Data were collected using the recce and line transect method. Chimpanzee night nests were categorized by their location: arboreal versus terrestrial. During the two field surveys arboreal night nests were the most frequently constructed nest type at both sites, and the only type of night nest constructed at Bechati. Terrestrial night nests were constructed at Andu. The main difference between these two sites is the level of human predation and agricultural development. At Bechati chimpanzees inhabit forest regions around dense, expanding villages and are regularly hunted by humans. However, at Andu the chimpanzee populations are not under the same threat. Therefore, terrestrial night nest construction appears to be a behaviour exhibited where there is less hostile human presence.

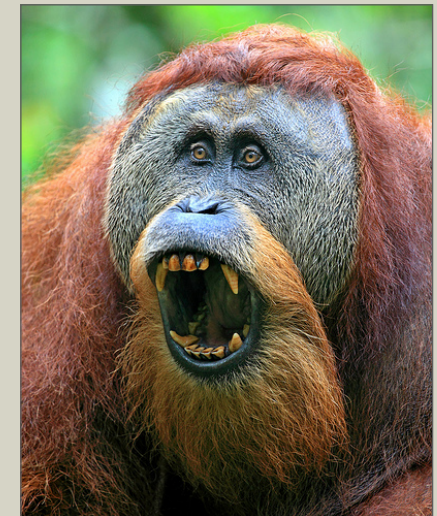
## Death Among Geladas (*Theropithecus gelada*): A broader perspective on mummified infants and primate thanatology by: Ryan Burke

Despite intensive study in humans, responses to dying and death have been a neglected area of research in other social mammals, including nonhuman primates. Two recent reports [Anderson JR et al.; Biro Det al.] offered exciting new insights into behavior toward dying and dead conspecifics in our closest living relatives—chimpanzees. Here, we provide a comparative perspective on primate thanatology using observations from a more distant human relative—gelada monkeys (*Theropithecus gelada*)—and discuss how gelada reactions to dead and dying groupmates differ from those recently reported for chimpanzees. Over a 3.75-year study period, we observed 14 female geladas at Guassa, Ethiopia carrying dead infants from 1 hr to Z48 days after death. Dead infants were carried by their mothers, other females in their group, and even by females belonging to other groups. Like other primate populations in which extended (410 days) infant carrying after death has been reported, geladas at Guassa experience an extreme climate for primates, creating conditions which may favor slower rates of decomposition of dead individuals. We also witnessed the events leading up to the deaths of two individuals and the responses by groupmates to these dying individuals. Our results suggest that while chimpanzee mothers are not unique among primates in carrying their dead infants for long periods, seemingly “compassionate” caretaking behavior toward dying groupmates may be unique to chimpanzees among nonhuman primates (though it remains unknown whether such “compassionate” behavior occurs outside captivity).

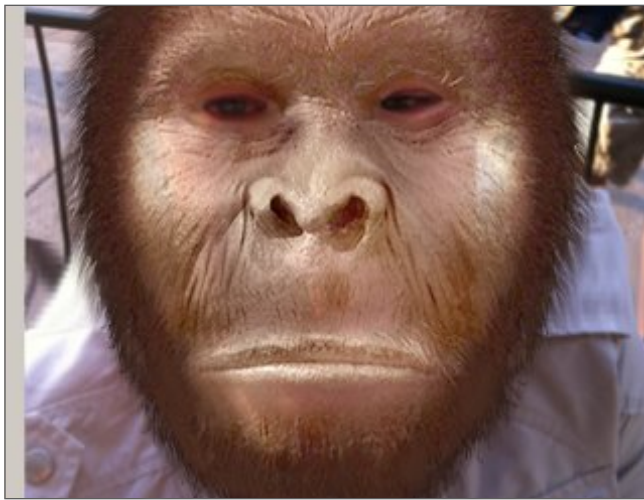


## Muscle architecture and bone morphology of the humerus in captive orangutans by: Karyne Rabey

Muscle attachment sites are the main observable record of muscle structure and function on the skeleton and may be important indicators of behaviour. Given that muscle markers seem to develop in response to muscle use and size, they are often used as a surrogate of the strength of the muscles when reconstructing lifestyles in past or extinct populations. Although more studies are investigating the dimensions of muscles in hominoids, there is little information regarding muscle architecture and its direct relationship with muscle attachment. The main goal of this project was to investigate whether muscle markings of the humerus reflect muscle size, strength and activity of captive Sumatran orangutans, to not only refine current ideas about musculoskeletal structures and function in living primates, but also our behavioural interpretations in fossil primates. Sixteen muscles of the forelimbs that cross the shoulder and the elbow were examined in one male and one female orangutan from the Toronto Zoo. Results indicate that the shoulder abductors have the lowest capacity of power. In a suspensory position, the arm is fully abducted under the influence of gravity, making the arm abductors less important. At the elbow, there seems to be dominance with the extensors, which is contrary to past studies, where the flexors were found to be dominant. The large triceps, which tends to enhance terrestrial locomotion, might be associated with the nature of the zoo animals. To better quantify this tendency, site morphology, mechanical properties and activity patterns of the muscles will be further investigated.







THANKS  
FOR  
COMING  
OUT!

AGSU

1st MEDUSA CONFERENCE 2011/12  
(BIOLOGICAL ANTHROPOLOGY/  
BIOLOGICAL ARCHAEOLOGY)

ANTHROPOLOGY GRADUATE  
STUDENT UNION (AGSU)  
UNIVERSITY OF TORONTO (UofT)  
Friday October 21, 2011

Hosted by:  
Cadell Last and Amber Walker-Bolton

The second 2011/12 Medusa  
Conference will be held on  
Friday November 11th 2011  
(12:30-2:30pm). Sociocultural  
anthropology, linguistics and  
sociocultural archaeology will be  
the focus.

AGSU

**"Stink Flirting" in Ring-tailed Lemurs (*Lemur catta*):  
male olfactory displays operate as costly signals and  
are linked with female choice and male mating  
success by: Amber Walker-Bolton**



Ring-tailed lemurs (*Lemur catta*) communicate primarily via chemical signals and the visual and auditory displays associated with scent communication. Males engage in tail anointing and wafting displays towards both male and female targets. We examined the function of these displays from male senders to female receivers in a mating context. Data were collected on two groups of wild ringtailed lemurs at Berenty Reserve, Madagascar. Male tail anointing and wafting displays were shown to operate as costly signals of male genetic quality to preoestrous and oestrous females in three ways. First, tail anointing displays placed a male at risk, as males were targeted for aggression at a higher rate in the 40 seconds after tail anointing ( $X + SE = 0.93 + 1.083 g$ ,  $N = 120$ ) than they were during matched controls ( $X + SE = 0.08 + 0.433 g$ ,  $N = 120$ ). Second, females exhibited preferential mate choice for males who directed tail anointing and wafting displays towards them, even after controlling for male rank (anoint:  $Trw, xy, z = 0.31$ ,  $P = 0.01$ , waft:  $Trw, xy, z = 0.25$ ,  $P = 0.02$ ). Finally, male mating success (copulations) correlated with the performance of tail anointing and wafting displays when male rank was controlled for (anoint:  $d.f. = 12$ ,  $r = 0.53$ ,  $P = 0.05$ , waft:  $d.f. = 12$ ,  $r = 0.55$ ,  $P = 0.04$ ). This study provides the first evidence that male tail anointing and wafting displays impact mating outcomes in this species. These findings show how male ring-tailed lemurs use a species-specific behavioural display to bypass the bulletin board effect inherent in scent marking. These olfactory displays act as honest signals of genetic fitness while allowing a means for the efficient chemical transfer of genetic quality information from male to female.

