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## PHYTOLITHIC ANALYSIS - A NOVEL APPROACH FOR ASSESSING CHIMPANZEE DIET

C.A. Phillips, C. Lancelotti

*University of Cambridge, Cambridge, United Kingdom*

*Presenter's Email: cap60@cam.ac.uk*

Directly observing feeding by wild apes reveals crucial aspects of their diet, but such behavioural data are available only from fully habituated populations which comprise less than one fifth of current study sites. New, integrated approaches are needed to yield indirect data on other ape populations, most of which will never be habituated, in order to identify the full range of dietary constituents. Phytoliths are microscopic silica bodies that form between and within living plant cells from their uptake of soluble silica. They can be taxonomically distinctive and are preserved even after plant decay, burning or ingestion. We present both wet and dry oxidation methods of extraction, in order to detect diagnostic phytoliths found in fresh faecal samples (n=55) collected from 10 adult chimpanzees in Kanyawara, Kibale National Park, Uganda from June 2008 to January 2009. Our microscopic analysis of faecal samples is compared with phytoliths extracted from different plant parts e.g. stem, leaf, etc. (n=62) of a reference collection of plant species (n=35) known to be included in the diet of this community of apes. We discuss the potential of these non-invasive methods for primate dietary analysis, especially for determining plant parts of partly- and fully-digested food-items in faeces, which are difficult or impossible to identify using existing methods.

Keywords: diet, chimpanzee, phytolith, faeces