

Brief Communication:

# **Preliminary Report on Bonobo (*Pan paniscus*) Feeding Ecology in a Forest-Savanna Habitat at Bolobo, Democratic Republic of Congo**

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## **INTRODUCTION**

We present a preliminary report on foods consumed by unhabituated bonobos (*Pan paniscus*) in a forest-savanna habitat during the period 07-29 September 2008. Although limited in scope, our data reveal some novel foods that had not been reported as food items from other bonobo study sites. This study was conducted 300 km northwest of Kinshasa along the Congo River, near the villages of Nkala, Mbou-Mon-Tour, and Embirima, Bolobo Territory, District of Plateaux de Batéké, in Bandundu province in D.R. Congo (for more details, see Maloueki *et al.* 2013).

We tracked the bonobos using noninvasive methods by following along transect lines located by random selection (Maloueki *et al.* 2013) and bonobo traveling paths. Direct observation of bonobo feeding behaviour was not feasible as the animals were not fully habituated and moved rapidly through the trees. Low visibility in the forest and the dense undergrowth further hindered systematic behavioral observations. The majority of our *ad-libitum* observations were recorded indirectly by identifying food remains around sleeping sites and identifying discarded food items along bonobo paths or trails where bonobo footprints were seen. Additionally, trackers employed to follow the bonobos for habituation, provided information about plant foods consumed by the bonobos. During the study period, the bonobos were more terrestrial than in previous encounters between the periods from December 2007 to March 2008 (Ndimbo *et al.*

unpublished data) due to the ongoing habituation effort. During such encounters we noted that bonobos fed on fruits, leaves, stems and shoots of terrestrial herbs, possibly coinciding with a seasonal scarcity of arboreal ripe fruits (Maloueki, personal observation). We recorded frequency of food items as one count per observation in a discrete feeding-patch.

## **RESULTS**

Terrestrial herbaceous vegetation (THV) was a major part of the bonobos' diet even in the presence of arboreal ripe fruits. The bonobos consumed the soft parts of the plants such as seedlings, stems, leaves, pith, and fruit pulp. We noted 24 species of plants consumed by bonobos, belonging to 18 genera from 11 families (Table 1). The most frequently represented families were Marantaceae (25%, N = 6), followed by Zingiberaceae (16.7 %, N = 4), Apocynaceae (12.5 %, N = 3), Commelinaceae, Connaraceae, Poaceae (8.33 %, N = 2), and Annonaceae, Dioscoreaceae, Loganiaceae, Piperaceae, Sapindaceae (4.17 %, N = 1).

Some species recorded during this study were absent and/or not previously reported as food resources for wild bonobos in other studies. The novel species include Annonaceae *Annona senegalensis*, Apocynaceae *Landolphia lanceolata*, Clitandra *cymulosa*, Connaraceae *Rourea coccinea* var. *viridis*, Dioscoreaceae *Dioscorea smilacifolia*,

Table 1. THV (which can also include small woody shrubs)<sup>a</sup> plants consumed by bonobos (*Pan paniscus*) in the forest-savanna at Bolobo.

Family Species	Téké Name	Part Consumed	Life Form	References <sup>b</sup>
<b>Annonaceae</b>				
<i>Annona senegalensis</i> subsp. <i>oulotricha</i> Le Thomas	Elole	Pulp	Shrub	
<b>Apocynaceae</b>				
<i>Clitandra cymulosa</i> Benth.	Manyau	Pulp	Vine	
<i>Landolphia lanceolata</i> (K. Schum.) Pichon	Bempuri	Pulp	Vine	
<i>Landolphia owariensis</i> P. Beauv.	Mayaon	Pulp	Vine	1, 2
<b>Commelinaceae</b>				
<i>Palisota ambigua</i> (P. Beauv.) C.B. Clarke	Matilatili	Pith	Herb	1, 2, 3, 4
<i>Palisota hirsuta</i> (Thunb.) K. Schum.	Matilatili	Pith	Herb	1, 2
<b>Connaraceae</b>				
<i>Agelaea pentagyna</i> (Lam.) Baill.	Unknown	Pulp, Leaf	Vine	2
<i>Rourea coccinea</i> var. <i>viridis</i> (Gilg) Jongkind	Unknown	Pulp, Leaf	Vine	
<b>Dioscoreaceae</b>				
<i>Dioscorea smilacifolia</i> De Wild.	Esalatina	Stem	Vine	
<b>Loganiaceae</b>				
<i>Strychnos cocculoides</i> Baker	Bikilikio	Pulp	Tree	
<b>Marantaceae</b>				
<i>Haumania leonardiana</i> Eurard & Bamps	Nteele	Pith	Herb	5
<i>Haumania liebrechtsiana</i> (De Wild. & T. Durand) J. Léonard	Nkuwanseyi	Pith	Herb	1, 2, 3, 4
<i>Haumania</i> sp.	Ekanu	Pith	Herb	
<i>Marantochloa congensis</i> (K. Schum.) J. Léonard & Mull.	Makanu	Pith	Herb	1
<i>Megaphrynium macrostachyum</i> (Benth.) Milne-Redh.	Nkuwangowu	Pith	Herb	1, 2, 3, 4
<i>Sarcophrynium schweinfurthianum</i> (Kuntze) Milne-Redh.	Mpumpolo	Pith	Herb	1, 2, 3, 4, 5

Table 1. THV (which can also include small woody shrubs)<sup>a</sup> plants consumed by bonobos (*Pan paniscus*) in the forest-savanna at Bolobo. (Continued.)

Family Species	Téké Name	Part Consumed	Life Form	References <sup>b</sup>
Poaceae				
<i>Imperata cylindrica</i> (L.) Raeusch	Makawu	Stem	Herb	
<i>Saccharum officinarum</i> L.	Koko	Stem	Herb	1, 4
Piperaceae				
<i>Piper guineense</i> Schumach. & Thonn.	Bankere	Pulp	Vine	
Sapindaceae				
<i>Ganophyllum giganteum</i> (A. Chev.) Hauman	Unknown	Pulp	Tree	
Zingiberaceae				
<i>Aframomum alboviolaceum</i> (Ridley) K. Schum.	Montuna	Pith, Pulp	Herb	2
<i>Aframomum</i> sp.	Ntuna ababebubu	Pith, Pulp	Herb	1, 2, 3, 4, 5
<i>Aframomum angustifolium</i> (Sonn.) K. Schum.	Ntondolo	Pith, Pulp	Herb	
<i>Renealmia africana</i> Benth. ex Hook. f.	Montuna	Pith	Herb	1, 2, 3, 4

<sup>a</sup> Definition given by Conklin-Brittain *et al.* 2001.<sup>b</sup> Data comparing the list known as food resources with those from other bonobo study sites.

1. Wamba: Idani *et al.* 1994.
2. Iyondje: Maloueki (unpublished data).
3. Lomako: Badrian *et al.* 1981.
4. Lake Tumba: Inogwabini & Matungila 2009.
5. Lomako: Malenky & Stiles 1991.

Loganiaceae *Strychnos cocculoides* (this tree grows in woodlands that are burnt annually), Piperaceae *Piper guineense*, Poaceae *Imperata cylindrica* (grass), and Sapindaceae *Ganophyllum giganteum*. The lack of consumption of these food items in other bonobo populations may be due to cultural difference or food preference (Hohmann & Fruth 2003; Harrison & Marshall 2011). Additionally, some dietary variation across sites may be the influence of habitat types for the presence or absence of plant species.

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