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**Newly observed predation of
 wild birds by M-group
 chimpanzees (*Pan troglodytes
 schweinfurthii*) at Mahale,
 Tanzania**

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INTRODUCTION

A number of predatory habits of wild chimpanzees (*Pan troglodytes*) have been reported across Africa^{1,2,3,4}. Most of these studies have reported mainly meat-eating of mammals. There are a few descriptions of predation of birds by chimpanzees both direct and indirect evidence in some study sites⁴⁻¹¹.

When chimpanzees hunt and eat primates of other

species, most chimpanzees present actively join in the hunt and the subsequent meat-eating^{1,2,12}. In contrast, when preying on non-primate mammals, such as blue duiker, bush pig, and squirrel and so on, chimpanzees hunt in an opportunistic manner and not in groups^{3,12,13}. Few studies have described predation on wild birds by chimpanzees. This study reports 3 direct observations of meat-eating of birds by chimpanzees in Mahale.

Study site and observation method

The M-group chimpanzees in Mahale have been observed for more than 40 years and all members have been identified and well habituated to human observers. The first author, *MF*, conducted the field studies between May 2005 and April 2006. The second author, *MS*, conducted his investigation between September 2001 and September 2002. We observed the chimpanzees in detail when they engaged in predatory behavior.

RESULTS

Case 1

On October 8, 2001, at 1233, *MS* observed 2 adult females TZ (age, 19 years) and NK (age, 31 years) up in a tree. TZ put her hand in the hole of the trunk and retrieved a nestling of a trumpeter hornbill (*Ceratogymna bucinator*). NK then approached TZ and took the nestling from TZ and moved to a spot approximately 3 meters away. At 1235, an adult female JN (estimated age, 27 years) inserted her hand into the same hole but did not find anything. NK held on to the carcass but did not eat it; she left the carcass on the ground at 1237. Thereafter, TZ climbed down to the ground and picked the carcass up. At 1240, she started eating the head of the carcass. An adolescent female ZL (estimated age, 15 years) approached TZ and uttered a pant-grunt. TZ stamped her foot while holding the carcass in her mouth, and ZL screamed and fled. At 1249, NK and TZ went away. *MS* did not witness whether TZ abandoned the carcass before moving or not.

Case 2

On August 2, 2005, at 1434, *MF* observed TZ (age, 23 years) climb a tree and walk slowly on one of its branches. *MF* did not clearly witness the moment when TZ procured something from a bird's nest, but observed

that at 1438, 2 parent white-necked ravens (*Corvus albicollis*) attacked TZ. TZ then descended to a lower spot on the tree, and started eating the nestling at 1508. At 1525, TZ's son TD (age, 4 years) stared at TZ's mouth and approximated his mouth to his mother's and obtained a small piece of meat. An adult female AK (estimated age, 24 years) also approached and stared at TZ for a few minutes, and then reached for the carcass in TZ's hand. AK succeeded in obtaining a piece of meat at 1548 and ate it with her daughter AC (age, 7 years). At 1551, an adult female SY (estimated age, 22 years) and her daughter SW (age 2 years) appeared. SY groomed TZ for about 3 minutes. Thereafter, SY repeatedly looked into TZ's mouth and hand, and then, TZ groomed SY for 3 minutes. TZ restarted eating the carcass, and SY extended her hand toward TZ's hand. SY acquired a small piece of meat at 1601. TZ and TD started moving and abandoned the carcass at 1609.

Case 3

On November 1, 2005, MF observed chimpanzees preying on a red colobus and consuming its meat for about one hour. At 1322, an adult male DW (age, 17 years) was observed holding a carcass of an adult black kite (*Milvus migrans*). At 1325, MF's research assistant noted that an adolescent male PR (age, 14 years) also held a carcass of a black kite. Both DW and PR departed and were quite a distance away from the other members. When the group engaged in eating the red colobus began to disperse at 1540, a juvenile male OS (age, 7 years) arrived holding the body of an adult black kite. He carried and started eating it by himself. His mother OP (estimated age, 34 years), his sister RB (age, 19 years), and RB's daughter RC (age, 7 years) approached OS, and he allowed them to eat the kite. Afterward, two adult females got small pieces of meat from OS. The alpha male AL (age, 17 years) then arrived and stared at OS but left quickly. After this, we lost OS momentarily, and subsequently saw his niece RC with the carcass (Fig. 1). Then, OS took and carried it. At 1713, OS abandoned the carcass and started moving with the other group members. We were unable to determine whether OS had simply picked up one of the carcasses that PR or DW had abandoned or whether he captured it independently. We can report that at least 2 black kites were hunted and eaten by chimpanzees.



Fig. 1. A juvenile female with a carcass of a black kite.

DISCUSSION

Our study revealed some characteristics of bird predation by chimpanzees based on 3 direct observations and some information about the predation of wild birds by chimpanzees obtained through previous studies (Table 1).

First, capture of nestlings from their nests seems similar to that of non-primate mammals in that it is solitary and opportunistic. Our observations showed that chimpanzees do not hunt birds in groups. In the 1st and 2nd episodes, TZ took a nestling from a bird's nest. She approached each nest and took the nestling, which offered no resistance to the predator. The bird parents attacked TZ in the 2nd case, but she succeeded in capturing the nestling.

Second, we can point out individual differences among chimpanzees even within a unit group in their tendency to hunt and eat birds. Not all the chimpanzees present in the 3 episodes begged for meat actively, while the hunter and meat possessor ate the meat. In the 1st case, although the adult female NK appropriated the carcass of the trumpeter hornbill, she abandoned it without eating it. In the 3rd case, although the alpha male AL approached the meat possessor OS, AL did not show any interest in the meat. In Gombe, among 14 episodes of bird predation by chimpanzees, 7 were performed by the same individual—a juvenile female named Pom⁸.

Lastly, data across study sites show that chimpanzees may not prey on birds with enough ability to fly. Most of developmental stages of bird prey were

Table 1. Species, developmental stages of birds preyed upon by wild chimpanzees and age-sex of predators in five chimpanzee study site.

Study site	*Sub sp.	Prey species	Developmental stages of prey	Hunter or meat possessor	References
Mahale	S	Crested guineafowl (<i>Guttera edouardi</i>)	Eggs	-	6
		Scaly francolin (<i>Francolinus squamatus</i>)	Young	-	6
		**Vieillot's black weaver (<i>Ploceus nigerrimus</i>)	Eggs, fledgelings	-	6
		White-browed coucal (<i>Centropus superciliosus</i>)	Injured adult	-	6
		Chicken (<i>Gallus gallus</i>) (domestic fowl)	Chickens	Adult M	6
		Tranpeter hornbill (<i>Ceratogymna bucinator</i>)	Nestling	Adult F	This study
		White-necked raven (<i>Corvus albicollis</i>)	Nestling	Adult F	This study
		Black kite (<i>Milvus migrans</i>)	Adult	Adult M, adolescent M, juvenile M & F	This study, Nishida (unpublished)
Gombe	S	**African green pigeon (<i>Treron australis</i>)	Eggs		8, 9
		Scaly francolin (<i>Francolinus squamatus</i>)	Nestlings	• 7/14 episodes juvenile F	8, 9
		Palm-nut vulture (<i>Gypohierax angolensis</i>)	Eggs, young	(Pom)	8, 9
		Helmet guineafowl (<i>Numida meleagris</i>)	Nestlings	• 5/14 episodes adult Ms	8, 9
		African Pied Wagtail (<i>Motacilla aguimp</i>)	Injured adult		8
		**Common bulbul (<i>Pycnonotus barbatus</i>)	Unknown	• 2/14 episodes adult Fs	8
		Weaverbirds (<i>Ploceus</i> spp.), at least 2 species	Nestlings, adult		8, 9
		Woodpecker ? (<i>Picidae</i> sp.)	Nestlings		8
Kibale	S	Crested guineafowl (<i>Guttera pucherani</i>)	-	-	4
Ndoki	T	Hornbill ? (<i>Ceratogymna</i> sp.)	Unknown	Adult F	10
		Francolin ? (<i>Francolinus</i> sp.)	Nestling	Adult M	10
Bossou	V	**African wood owl (<i>Strix woodfordii</i>)	-	-	11

* S: *schweinfurthii*, T: *troglodytes*, V: *verus*

** Common and species names are as reported in van Perlo, 1995, and hence, they differ from those described in each reference.

eggs, nestlings or injured adults, without either ability to fly or resistance to predators.

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