

NOTES

Size (and structure) of forest elephants groups (*Loxodonta africana cyclotis* Matschie, 1900) in the Odzala National Park, Republic of Congo

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The savanna elephant (*Loxodonta a. africana*) has been the subject of many studies in Eastern and Southern Africa. Comparatively, little information is available about elephants living in the tropical forests of Central and Western Africa. Direct observations of forest elephants (*Loxodonta africana cyclotis*) were made during a six-month period, from September 1994 to February 1995, in the Odzala National Park (O.N.P.), in the North of the Republic of Congo, at about 600 km from Brazzaville (0°23'N - 1°10'N, 14°39'E - 15°11'E).

The park covers 284 800 ha and is divided into 3 areas : the O.N.P. *sensu stricto* (126 600 ha), the Lekoli-Pandaka Fauna Reserve (68 200 ha) and the Mboko hunting Domain (90 000 ha) (Hecketsweiler *et al.* 1991). The hydrographic system is extended and is included in the Mambili river basin, with the Lekoli and its tributaries (Fig. 1). The climate, of equatorial type with southern conditions (4 seasons), corresponds to the guineo-congolese forest described by Letouzey (1969). In the North, the park is largely covered by tropical rain forests that tend to give away to bushy savanna in the South. The latter also encloses poals and "salines" (opened zones, close to water courses, visited by large fauna to eat earth and get salts).

This paper reports details of observed size and structure of elephant groups. Seventeen groups were observed in salines in the forest, three on the banks of the Lekoli river and twelve in savanna. The size and structure of these groups are shown in Table 1. The average size of the 32 groups was 3.4 individuals. The groups seen on the banks of the Lekoli river and in the savanna were larger (respectively 4.7 and 4.9 individuals) than those at forest salines (2.1). If we exclude solitary individuals (most probably males), the average sizes of groups ("family units") found in salines and savanna increase to 3.1 and 5.7 individuals respectively. In comparison, in the Lopé Reserve (Gabon), the mean group size for complete counts in forest was 1.8 individuals and the mean minimum group size, when observation conditions did not permit

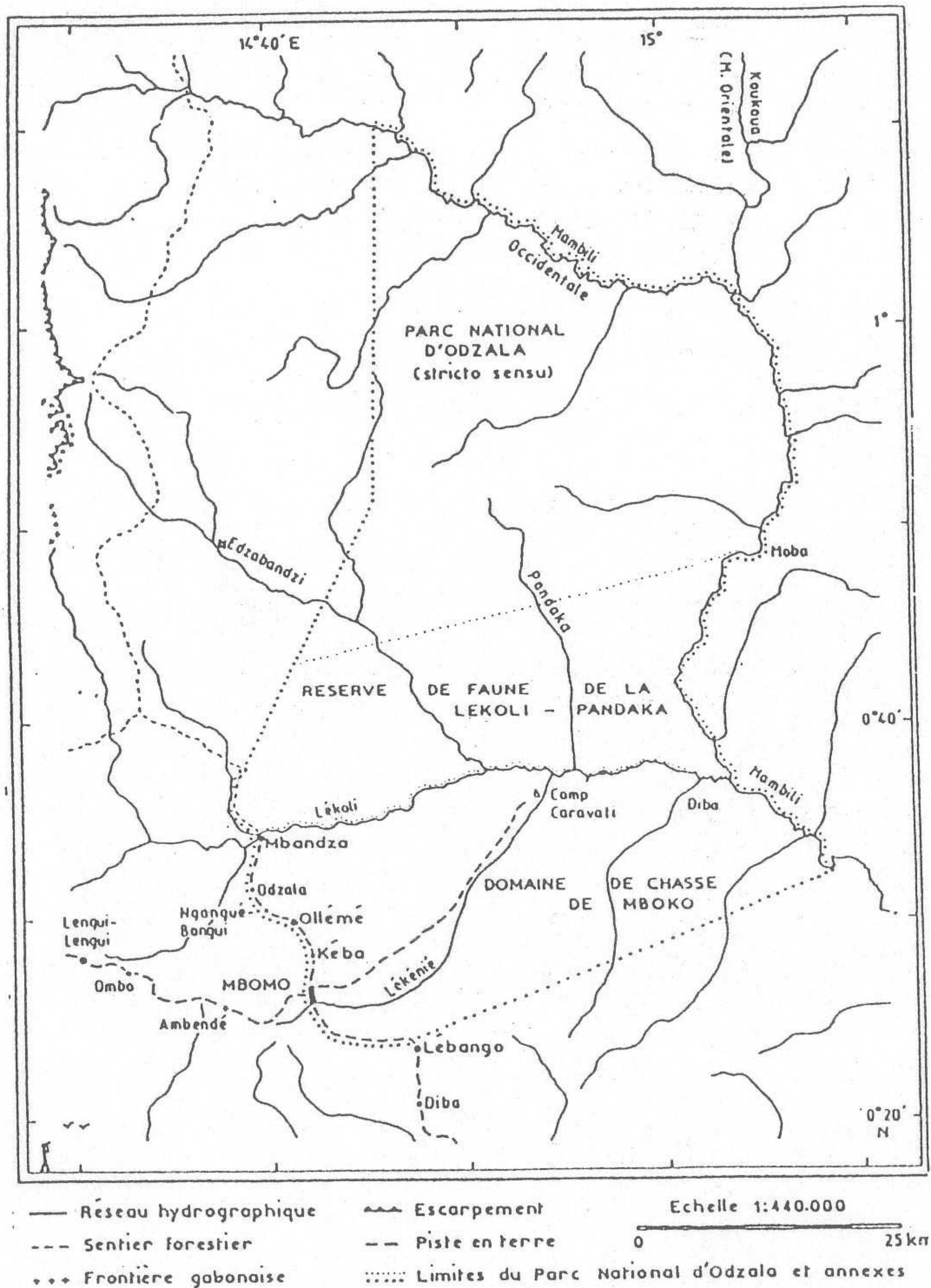


Fig. 1. — Map of the Odzala National Park, with the the hydrographic network et réseau hydrographique principal du Parc National d'Odzala (Hecketsweiler *et al.*, 1991).

complete counts, was 2.5 individuals (White *et al.* 1993). Still in Lopé, groups observed at salines had a mean group size of 2.6 and the mean size of groups seen in savanna was 2.8 (White *et al.* 1993).

A group structure was established in twenty-eight cases. In salines and on the banks of the Lekoli river, it concerned mostly solitary individuals (fifty percent of the observations), pairs of adults or one or two adult(s) accompanied by one or two young. The elephants we met in savanna made very variable groups which could include up to seven adults with eight young. During one same morning, the observation we made of thirty-seven elephants divided into four groups of ten, fifteen, seven and five individuals, may imply a tendency within the elephants of the Odzala National Park to live in associations to form important gatherings when crossing vast and bare expanses.

TABLE 1. – Composition of elephant groups in the O.N.P.

Group size	Group Structure	frequency		
		salines	banks of Lekoli river	savanna
1	lone adult	8		2
2	2 adults	2		2
	1 adult / 1 unknown		1	
	1 adult / 1 juv.	1		
3	3 unknown	1		
	1 adult / 2 juv.	1		1
	2 adults / 1 juv.			1
4	4 unknown	1		
	3 adults / 1 juv.		1	
	2 adults / 2 juv.	2		1
	4 adults	1		
5	2 adults / 3 juv.			1
6	3 adults / 3 juv.			1
7	5 adults / 2 juv.			1
8	3 adults / 2 juv. / 3 unknown		1	
10	5 adults / 5 juv.			1
15	7 adults / 8 juv.			1

Table 2 shows comparable data on the size of groups and family units of elephants in other African countries. In Kenya, the groups of savanna elephants (*Loxodonta a. africana*) are composed on average of ninety-four individuals (Moss and Poole 1983 ; Moss 1988). Olivier (1978) finds an average of five to six individuals in each group of the Asian elephant (*Elephas maximus*) in the rainy Malaysian forest.

TABLE 2. – Available data concerning the mean size of family units of forest elephant groups, compared to the data from the present study.

Authors	Study area	General habitat	Mean group size	Mean size of a "family unit"
MERZ (1986)	Taï National Park, Ivory Coast	forest	2,44	3,4
MOSS (1988)	Amboseli National Park, Kenya	savanna	9,4	
OLIVIER (1978)	Malaysia	forest	5-6	
TCHAMBA (1992)	Santchou Reserve, Cameroon	forest		5,25
WHITE and al. (1993)	Lopé Reserve, Gabon	forest	2,8	3,5
Present study	Odzala National Park, Congo	forest	3,4 salines 2,1 savanna 4,9 Lekoli 4,7	3,1 5,7 4,7

White *et al.* (1993) attribute the different group sizes of savanna and forest elephants to the importance of fruits in the diet of the latter.

In Odzala National Park, groups (family units) size of elephants is small. This corresponds to the typical social organisation of the forest elephants. In order to get more information on this species, further researches should be carried out to point out its essential role in the forest ecosystem and to ensure its protection throughout the Congolese territory.

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