

Preliminary Information of the Pygmy Chimpanzees (*Pan paniscus*) of the Congo Basin

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ABSTRACT. Local information was collected on the ecology of pygmy chimpanzees in the Lac Tumba Region, Zaire. Population density very small; habitat, secondary swamp forest with occasional trespass of 'esobe' grassland; locomotion, quadrupedal walking on the ground; diet, primarily frugivorous and vegetarian, but insects, honey and fish consumed. Many kinds of cultivated plants also eaten; sleeping nest built in a tree in the same fashion as ordinary chimpanzees; group size fairly large, from 15-20 to 40 head; human persecution very severe. It proved possible to make a field study of the species in this region.

INTRODUCTION

Neither the ecology nor the behavior of pygmy chimpanzees (*Pan paniscus*) is known in the scientific world, though their close relatives, ordinary chimpanzees (*P. troglodytes*) and gorillas (*Gorilla gorilla*) have been intensively studied in their natural habitat in recent years.

Pygmy chimpanzees were first described as a new subspecies of chimpanzee by ERNST SCHWARZ in 1929. COOLIDGE (1933) clarified that the pygmy chimpanzee was a true pedomorphic species which shows definitely juvenile characteristics in an adult state; he writes, "...*paniscus* reflects certain definitely juvenile characteristics beginning with the shape of head, and including the comparative fineness of the hair, which covers the body. Also the white anal tuft of hairs found in young which usually disappears in the adult animals is still very much in evidence in some full grown *paniscus*. In most races, the young animals have black hair which takes on a tinge of brown or grey in the adult, but this is not shown by our two adult hides of *paniscus*." Thus, he concludes that "the *paniscus* is ... the most important of the chimpanzees in a study of the phylogeny and relationships of this high order of anthropoid apes. It may approach more closely to the common ancestor of chimpanzees and man than does any living chimpanzee hitherto discovered and described."

The above statements are enough to show the importance of the field study of pygmy chimpanzees. It is mainly due to the political conditions of the Congo and partly due to the difficulties of the study because of the dense vegetation of the habitat that the pygmy species has not been studied for long in its natural habitat.

I have found it essential to study the ecology and behavior of this species in order to reconstruct the society of the protohominid, but the information concerning this

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species is not only extremely scanty, but even the possibility of field study of the species is unclear. This made the author decide to travel in the République du Zaïre in order to collect as much information as possible and to look for places where the field study of pygmy chimpanzees is possible.

TRAVEL PROCEDURE

I first visited the Lwiro Center of the I.R.S.A.C. (Institut pour la Recherche Scientifique en Afrique Centrale) near Bukavu on February 4, where I obtained much information from Dr. PETER KUNKEL, the General Director of the Institute and was introduced by him to Professor PIÈRE VAN LEYNSEELE of the Université Nationale, Kinshasa, and who is also the Regional Director of the I.R.S.A.C. On February 7, I met with Professor VAN LEYNSEELE in Kinshasa. On February 12, he took me to the Mabali Center of the I.R.S.A.C., 120 km south of Mbandaka. On February 13, I collected much local information from Batwa and Ntomba inhabitants and selected Botuali Village as the site for my explorations. From February 14 to 16 I explored the forests near Botuali, on the south-western side of Lac Tumba, and gathered first-hand information from native hunters.

DISTRIBUTION AND SITES PROPOSED FOR FIELD STUDY

COOLIDGE (1933) gathered much information on the distribution of pygmy chimpanzees and drew a distribution map. This shows that pygmy chimpanzees are mainly distributed in an area demarcated westwards and northwards by the left bank of the Congo River, eastwards by the Lomani River and southwards by Lukolela, and that there is an isolated patch of habitat along the upperstream of the Lukenie River. Later, the eastern and southern boundary were extended to the Lualaba River and Kasai-Sankuru, respectively, by SCHOUTÉDEN (1948).

This distribution map, however, covers a vast area of the Central Congo and is practically meaningless for one who wants to begin field study in any limited area. Recently HARRISON (1970) clarified the concrete name of the habitats for pygmy chimpanzees; these are "the Odzala National Park" and "the Mabali Center of Tumba Lake Region."

Dr. KUNKEL listed the Mabali Center and Salonga National Park as possible sites for field study. Professor ALBERT BOUILLON of the Université Nationale, Kinshasa suggested that, since Salonga has the highest population density so far known, it would be the most rewarding site. But Dr. J. VERSCHUREN, Director of the "Institut des Parcs Nationaux de la République du Zaïre" said that there were no facilities available in Salonga National Park, which is situated in a very remote and inaccessible area, though he admitted that this park was established for the conservation of primary forests and pygmy chimpanzees.

Mr. BOGAERTS, Consulat de Belgique (Mbandaka) told me that a Belgian medical doctor named Dr. DE WIJS, who had been studying the pygmy chimpanzees in captivity was living at Busonjo, somewhere at the opposite side of Lisala.

Thus, I got three concrete place names which seemed meaningful for me to visit.

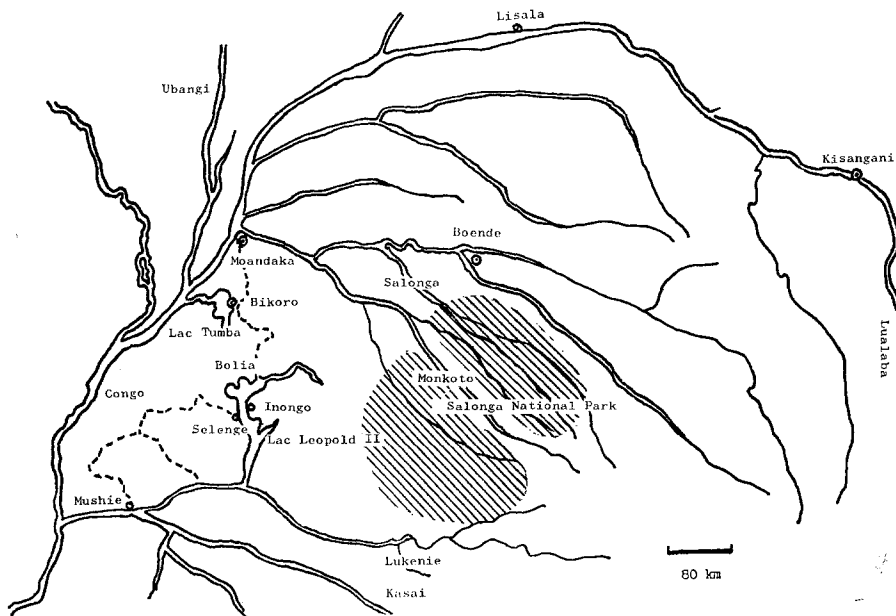


Fig. 1. The Congo Basin.

But I decided to focus my intensive information-collecting activities upon the Lac Tumba Region, considering the limited time given and the availability of facilities. "Odzala National Park", which HARRISON referred to, was totally unknown even to the staff of the Institute of National Parks, Kinshasa (Fig. 1).

INFORMATION ON PYGMY CHIMPANZEES OF THE LAC TUMBA REGION

Much information on the distribution of pygmy chimpanzees collected while I was staying in the Mabali Center and Botuali Village will be itemized below; the name of my informations are shown in brackets after each paragraph:

- 1) A Belgian saw-mill worker who was living in Inongo saw chimpanzees on the road running from Mushie to Selenge on the west side of Lac Leopold II. (Prof. VAN LEYNSEELE).
- 2) On Sep. 11, 1971, Miss HÉLÈNE PAGEZY, a research worker at the Mabali Center, found nests, foot-prints, and twigs broken at Nsau near Bolia, 250 km south of the Mabali Center (Miss H. PAGEZY). She suggested that because the foot-prints were so large, the animals leaving the footprints were not pygmy but ordinary chimpanzees.
- 3) Dr. MOREAU formerly reared a chimpanzee in the Mabali Center. This chimpanzee was a black-faced infant and had been captured at Botuali. It was fed sugar-cane, banana, oil-palm nuts, and the fruits of some wild plants (*matope*, *monsele*, *nonge*, etc.) (Mr. MPUTUSELE).¹⁾

1) A former worker of the Mabali Center, now living at Djalikenga village. He kept a captured pygmy chimpanzee at the Center.

- 4) About three years ago, a chimpanzee was caught in the Lac Tumba Region but died in the Mabali Center; its bones were sent to the Lwiro Center (Mr. KIBISWA, Administrative Director of the Mabali Center).
- 5) In 1968, a chimpanzee appeared from bush at the workshop of the Mabali Center (Mr. ITELA JOSEPH).²⁾
- 6) A chimpanzee was caught at Ngele on February 7, 1972, and may have been eaten by the inhabitants (Mr. KIBISWA). Chimpanzees are hunted at Ngele with bow and poisoned arrow and traps (Mr. MOMBA FRANÇOIS).³⁾
- 7) A fisherman in a boat saw chimpanzees in the river-side forest of the Ngie River early in February, 1972 (Mr. KIBISWA).
- 8) Chimpanzees have been seen at Botuali, Gondola, Bosanga, on the Ngange River, at Malualumba, Makuluandongo and many places on the south-western shore of Lac Tumba, but not at Bayange and the south-eastern parts of the lake (Mr. EMBELE JOSEPH⁴⁾ and Mr. IJAMBA JACOBO).⁵⁾

The preceding information clarifies the distribution of pygmy chimpanzees in the Lac Tumba Region (Fig. 2). The inhabitants on the eastern side of Lac Tumba deny the existence of chimpanzees in their haunts. It is very probable that the chimpanzee which appeared at the Mabali Center may have been a solitary individual that had moved from the south-western shore of Lac Tumba.

As already mentioned, Miss HÉLÈNE PAGEZY suggested that the foot-prints she saw near Bolia might be those of ordinary chimpanzees, considering the size. Moreover, she had local information that there were two kinds of chimpanzees living there. Although the size of foot-prints can vary greatly in the muddy terrain and we must be very careful about the method of obtaining information from rural inhabitants, this information is interesting in suggesting the co-existence of two chimpanzee species in the same habitat, a setting completely unknown so far. Unfortunately, I had no time to confirm the information.

HABITAT OF PYGMY CHIMPANZEES AT BOTUALI

I left the Mabali Center at 9 a.m. on February 14 crossed to the west shore of Lac Tumba and went upstream along the Lombambao River by means of a dug-out boat with a 25-horsepower outboard engine. At Mpili Village my party got a small canoe which we took to Boleke. It took two hours on foot from Boleke to Botuali, where we arrived at 4 p.m. I was accompanied by Miss HÉLÈNE PAGEZY, a guide, a translator, and two porters.

On February 15, it rained heavily from four to eleven o'clock in the morning, so we were only able to explore the forests for four hours in the afternoon of that day and four hours the next morning, but I saw four nests of chimpanzees in the forest in the two days.

2) A carpenter of the Mabali Center, born at Botuali. He joined my expedition as a guide.

3) An inhabitant of Djalikenga village. His father-in-law is a chimpanzee hunter at Ngele.

4) A hunter of Botuali village.

5) Ditto.

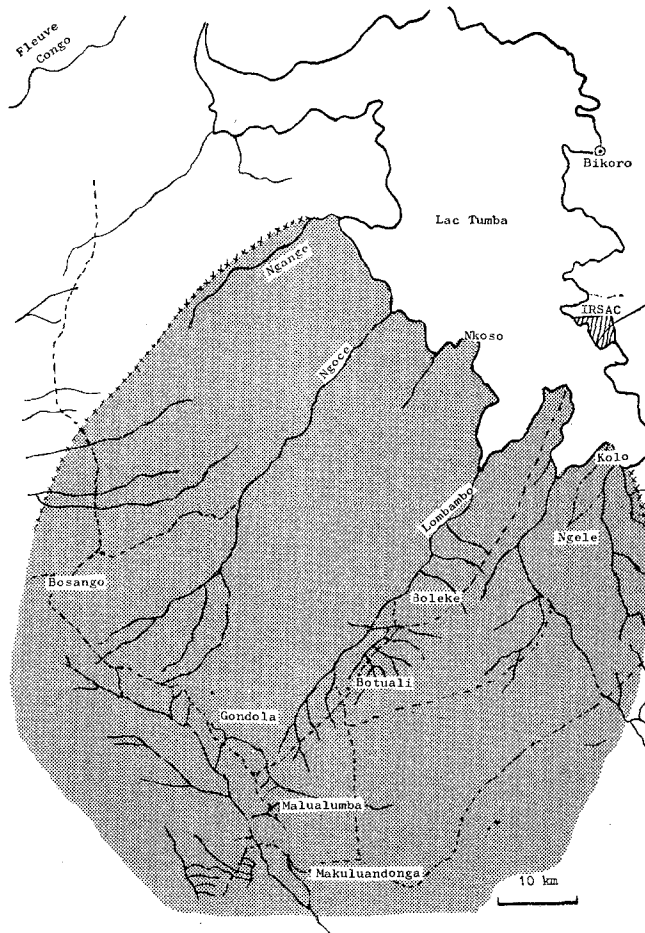


Fig. 2. The distribution of pygmy chimpanzees in Lac Tumba region.

The habitat of pygmy chimpanzees in this region is composed not of primary but of secondary forest, probably less than 50 years old. It was generally dark in the forest, but sunshine penetrated onto the forest floor in the vicinity of the village. The forest explored on February 15 was flooded and we had to walk in water which reached our knees. One third of the forest path was covered with water (Fig. 3).

The forests were swamp forests dominated by some tall leguminosa trees. I found here the same plant geni or species as were seen in the wettest part of the gallery forest of the Mahali Mountains of West Tanzania, where I had been studying ordinary chimpanzees (NISHIDA, 1968); these are *Pseudospondias microcarpa*, *Myrianthus* sp., *Dracaena usambarensis*, *Anthocleista schweinfurthii*, *Albizia* sp., *Pycnanthus* sp., *Voacanga lutescens*, *Aframomum* sp., *Costus* sp., and so on.

Four nests of chimpanzees were found in a tree 15 to 20 m high on the ground (Fig. 4). More than three months seemed to have elapsed since these nests were built. A leaf of *Raphia sese* (makali) was found on the ground, the substratum of the leaf having probably been eaten by pygmy chimpanzees within the week. Two shrubs were found, the branches of which were recently broken, also very probably by chimpanzees.



Fig. 3. A flooded forest.



Fig. 4. A nest of a pygmy chimpanzee.

According to the pygmy chimpanzee hunters of Botuali, the animals do not like to travel in the flooded forest. The floor of the forest near Botuali is said to be completely dry in May and June every year, when pygmy chimpanzees are very frequently seen in the immediate vicinity of the village. But when it begins to rain, they move to the drier, non-flooded area and cease to visit the village.

There are some grasslands locally called "esobe" in the midst of the forest region which pygmy chimpanzees are occasionally said to trespass in the dry season. The



Fig. 5. "Esobe" grassland surrounded by the tropical rain forest.

dominant grass species of "esobe" is *Jardinea gabonensis* and the dominant shrub *Annona senegalensis* (Fig. 5).

SOME ASPECTS OF BEHAVIOR AND FOOD HABITS AMONG PYGMY CHIMPANZEES

The chimpanzee hunters say that pygmy chimpanzees live in a rather large group. They are often seen in a group of from 15–20 to 40 individuals, but one or two chimpanzees are occasionally found travelling on their own. Because it is very hot in the daytime, they often spend their time on the ground. From the evening to the next morning they remain in the trees.

Chimpanzees are very afraid of domestic dogs, which make them flee to the trees. Chimpanzees do not like water, so they dare not penetrate into the water-flooded part of the forest.

The local hunters listed 12 species of wild plants as food of pygmy chimpanzees (Table 1). As far as the small collection of the wild food plants known is concerned,

Table 1. Wild food plants of pygmy chimpanzees (local information).

Vernacular name (Lontomba)	Latin name	Part eaten
mobeyi	<i>Anonidium monnii</i>	fruit
matope	<i>Landolphia owariensis</i>	fruit
makoyo		fruit
mapamba		fruit
monga		fruit
meyoyoko	<i>Renalmia africana</i>	fruit, stem
mbole		fruit
bikamu	<i>Myrianthus arboreus</i>	fruit
nsuku		root
nkomu		fruit
makali	<i>Raphia sese</i>	leaf
	<i>Costus</i> sp.	stalk

there do not seem to be any recognizable differences between the food of ordinary and pygmy chimpanzees.

Pygmy chimpanzees are said to munch insects such as fly larvae, caterpillars, and the larvae of long-horn beetles found in the dead oil-palms and honey. Moreover, very strangely, they are said to pick up mud-fish in the pools of damp forests and eat them. If this is true, pygmy chimpanzees will be the first example of fish-eating subhuman primates and no less omnivorous than ordinary chimpanzees.

Nine cultivated plants were reported to be consumed by pygmy chimpanzees at Botuali (Table 2). We must say that this figure is extraordinarily high for a list of cultivated plants eaten by wild great apes in one locality. Only six species of cultivated plants are known to be destroyed by mountain gorillas throughout their range: the fruits of maize and peas, the roots of carrots and taro, tubers of manioc, and the pith of banana (SCHALLER, 1963). Ordinary chimpanzees in Tanzania consume only four species of cultivated plants: the stalks of sugar-cane and maize, the pith of banana, and the nuts of the oil-palm. Tubers and roots of plants have not been reported eaten by ordinary chimpanzees. This suggests that pygmy species may be more polyphagous than ordinary chimpanzees.

Table 2. Cultivated food plants of pygmy chimpanzees (local information).

Vernacular name (Lontomba)	English name	Part eaten
mahoo	manioc	root
malala	orange	fruit
mba	oil-palm	nut
kawa	coffee	fruit
nkomo	banana	fruit
ntela	plantain banana	fruit
safu	"purple fruit"	fruit
sabuka	avocado pear	fruit
menselinga	sweet potato	tuber

EXAMINATION OF THE POSSIBILITY OF FIELD STUDY OF PYGMY CHIMPANZEES

This brief preliminary expedition has not produced enough information for those who wish to make a field study of pygmy chimpanzees. There is a possibility that there are other favourable sites for field study as well as the Salonga National Parks, Busonjo, or the Lac Leopold II Region, at which places I acquired the information of the existence of this species. Before we can begin to make an intensive study, we must first make an extensive preliminary survey covering the vast area of the Central Congo Basin.

It can, however, be said that we have enough information about the possibility of a study in the Lac Tumba Region.

My conclusion is that it is possible to make a field study in this area if the season is properly chosen. A fair amount of the habitat is water-flooded even in February, which is said to be a "small" dry season. This means that the conditions of the study will not be very pleasant. In the rainy season, it will be impossible to walk in the major



Fig. 6. An Ntomba hunter.

part of the forest. Therefore, it would be most difficult to work in the bush for more than six months a year.

If water conditions are excluded, we find a very cool climate and a flat, undulating forest floor; there are, however, a few tsetse flies. Moreover, we may expect the possibility of provisionization (feeding) by choosing some of the cultivated plants, since the chimpanzees are said to come very near Botuali village and even enter the plantations in May and June.

The inhabitants of this region have from olden times persecuted the pygmy chimpanzees, regarding them as a delicacy (Fig. 6). Chimpanzee meat is often wrapped in a large leaf and roasted in the fire. Baking and boiling are the other ways of cooking it. The local inhabitants also highly prize the limb bones of pygmy chimpanzees as a medicine which is believed effective in promoting bodily strength. When I asked them



Fig. 7. Bone fragments of pygmy chimpanzees: 3 humeri (right arm), a caput humerus, and 2 metacarpi. The inhabitants seem to think that only bones of the right arm have the magical power. (Bones identified by Drs. H. SAKURA and T. KIMURA of the University of Tokyo.)

whether I could get any bone or coat of a chimpanzee, I instantly received six fragments of limb bones representing three different individuals (Fig. 7). The coat was not obtainable because they consume the meat up to the skin! Therefore, it will not be easy to habituate pygmy chimpanzees to human observers. But since chimpanzee-eating is a habit throughout the Congo Basin, Botuali cannot be regarded as inappropriate from this viewpoint only.

The population density of chimpanzees near Botuali may not be high, though I cannot draw any accurate conclusions on the basis of such a brief exploration; during 10 hours of walking in the forest, I found only four old nests, one food remnant, and two broken branches.

I must now proceed to examine the other conditions for making a field study. Botuali has rather good accessibility; it takes three hours from Mbandaka to the Mabali Center by car and six hours from there to Botuali by boat and on foot. The Mabali Center has two Landcruisers, one lorry, one Peugeot saloon car, and a dug-out boat with an outboard engine. Moreover, the Mabali Center has many guest houses of the best quality, which are surrounded by well-protected tropical forests and is on Lac Tumba.

The Mabali Center has produced many botanical works, which will be useful for the ecological study of any animal. It will, therefore, be indispensable to get assistance from the I.R.S.A.C. Botuali village has a population of more than five hundred people, where we can expect to get local food, guides, information and many kinds of cooperation.

Such good accessibility and facilities are rather exceptional in the Congo Basin. In the other sites, such as Salonga, we meet with more difficult problems in the practical possibility of study than in the population density of animals.

To sum up, the Lac Tumba Region is a possible site and the only practical site known *at present* for the study of pygmy chimpanzees, even if we cannot say it is the best possible site.

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REFERENCES

- COOLIDGE, H. J., 1933, *Pan paniscus*. Pygmy chimpanzee from south of the Congo River. *Amer. J. Phys. Anthropol.*, Vol. XVIII, No. 1, July-Sep., 1933.

- HARRISON, B., 1971. *Primates in Medicine*, Vol. 5, *Experimental Medicine and Surgery in Primates. Conservation of Nonhuman Primates in 1970*, S. Karger, Basel, München, Paris, London, New York, & Sydney, 99 pp.
- NISHIDA, T., 1968. The social group of wild chimpanzees of the Mahali Mountains. *Primates*, 9: 167-224.
- SCHALLER, G. B., 1963. *The Mountain Gorilla: Ecology and Behavior*. The University of Chicago Press, Chicago.
- SCHOUTEDEN, H., 1948. *Faune du Congo Belge et du Ruanda-Urundi*, I. Mammifère.

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