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<NOTES>**Chimpanzees of the Kalinzu
Forest, Uganda.**

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The Kalinzu Forest Reserve, covering an area of 137 km², lies in western Uganda (30°07'E, 0°17'S). It is contiguous to the Maramagambo Forest that is a part of Queen Elizabeth National Park, and the total area of these two forests is 580 km². The Kalinzu forest is broadly classified as a medium altitude moist evergreen forest (1). Some parts of this forest have been logged by the Nkombe Saw Mill company, since the early 1970s. Furthermore local people are pit sawing in some parts of the forest now. The forest contains 6 species of diurnal primates; chimpanzee (*Pan troglodytes*), blue monkey (*Cercopithecus mitis*), redtail monkey (*Cercopithecus ascanius*), I'hoest's monkey (*Cercopithecus lhoesti*), black and white colobus (*Colobus guereza*), and the baboon (*Papio anubis*) (1).

I carried out a population census on chimpanzees



Parinari excelsa



View of the Kalinzu forest

using nest counts in 1992, and reported a high density of chimpanzees in the Kalinzu Forest: an estimated density of 2.0 - 4.7 chimpanzees per km² (2). Moreover, I showed that the density in the logged area was higher than that in the unlogged area.

From June 1997 to March 1998, three researchers, T. Furuichi, Y. Tashiro, and I, conducted a cooperative research project to reveal relationships between primate habitat use and forest structure. In this study, we set ten parallel census lines running east to west. Each census line was 5 km long, with a 500 m distance between census lines. Using these lines, we made censuses on the distribution of primates and other diurnal mammals, on distribution and seasonal changes of density of chimpanzee nests, and on vegetation and phenology.

The distribution of nest found along the census line and the vocalizations heard from the census line indicated that at least 2 groups of chimpanzees inhabit our study area (about 25 km²). One group mainly ranged in the eastern part of the study area while the other group ranged mainly in the western part.

The Nkombe Saw Mill has logged trees in the eastern part, mainly the species *Parinari excelsa*. *Musanga* dominant secondary forests have developed in its place. Many big *Ficus* trees were found in the logged area, and *Aframomum* spp. were abundant on the ground.

One group of chimpanzees ranged mainly in this logged area. They constantly fed on *Musanga* and *Ficus*

fruits from September 1997 to March 1998. They also seemed to feed on pith or fruit of *Aframomum* spp. and other herbs on the ground, though we could rarely observe feeding behavior of any kind on the ground. The constant availability of these fruits and herbs seemed to sustain the high density of chimpanzees around the *Musanga* dominant forest.

On the other hand, another group in the western part lived in the unlogged area, including the *Parinari* dominant forest, mature mixed forest, and hill forest. *Uvariopsis congensis*, *Telea nobilis*, *Warburgia ugandensis*, and other *Ficus* spp. were abundant in this area, and seeds of these fruits were often found in the feces of chimpanzees. This group shifted its main ranging area according to the seasonal changes in distribution of fruits. The patchy distribution of various types of primary forest in this area seemed to sustain the high density of chimpanzees.

The chimpanzee group in the eastern part of our study area was successfully habituated. Because local people had frequently visited the forest for logging but had never hunted chimpanzees or any other primates, chimpanzees were already accustomed to humans to some extent at the beginning of our study. Chimpanzees could often be observed within a distance of 20-40 m. All-male parties or mixed parties of males and estrous females were often observed, while mother-offspring parties were rarely observed. In some occasions, more than 10

chimpanzees were observed at one time. Most adult males of the group were individually identified, and numbered from 13 to 15. Judging from this number, more than 50 chimpanzees may belong to this group.

Chimpanzees did not look tense in presence of researchers. Feeding, resting, and many social behaviors including grooming and mating were often observed. We also observed several interesting events, such as tool-use, meat eating, and the 'rain dance'.

One day, I found some chimpanzees feeding on something on the ground. After they left, I found five stems of *Aframomum* spp. left on the nest of safari-ants, which seemed to be used for catching them. They removed all the leaves from the stems; each about 80 cm in length. It seems likely that chimpanzees used these stems as wands for catching safari-ants; as has been reported for Gombe (3) and Bossou (4).

I also observed chimpanzees eating meat of blue monkeys, although it is unclear whether they hunted for it or not. Meat sharing between adult males was also observed. One of them was observed eating meat and leaves of a vine alternatively. Fragments of animal bones were sometimes also found in chimpanzee feces.

A rain dance was observed twice. It was performed both times by adult male chimpanzees. During the heavy rain, they rushed up the top of the trees; vocalizing loudly and breaking branches.

The Kalinzu Forest seems to be a very promising site for the study of the ecology of chimpanzees and other primates, owing to high density of chimpanzees and wide variation of forest types. Further study will reveal the carrying capacity of each type of forest, and the importance of the combination of these forests for sustaining chimpanzee populations. Furthermore, the well habituated group in the east part will be a good subject for behavioral studies.

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