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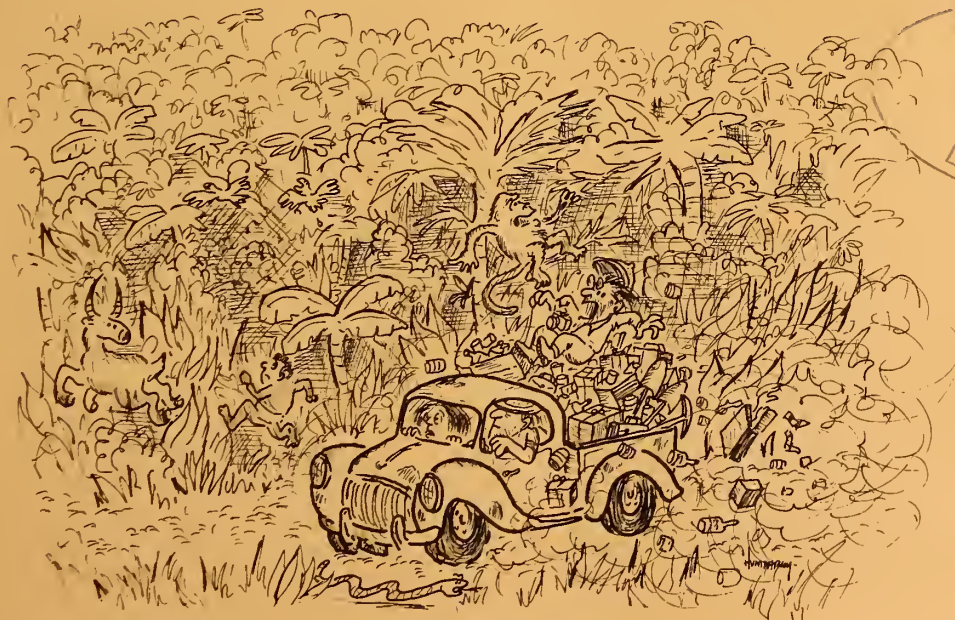
PYGMIES OF THE ITURI: AN ETHNOARCHAEOLOGICAL EXPLORATION

The tall, dark green forest canopy on each side of the dirt road pressed closer and closer together overhead with each passing mile of westward travel. As the emerald-green grasslands of the Zaire-Uganda border country dwindled behind us, I sat high in the back of our Toyota Hilux pickup on a pile of food, gasoline containers, Toyota spare parts, camp supplies, and shovels and hoes that we always carried to dig the pickup out of deep mud. Our destination--the Ituri Forest Project's field station in a remote area of the Ituri Forest inhabited by the Efe Pygmies. The station where Helen Strickland, my wife, and I would live for a year, lies along an almost impenetrable narrow track, one and one-half days journey, more than 120 km,

from the eastern forest edge. Here, the villages of the sedentary horticulturists and their wide swaths of cleared and cultivated land are fewer and more widely separated than in the forest margins or on its "main" roads.

Independent hunter-gatherers or serfs?

The various groups of Ituri Forest Pygmies, collectively called Mbuti by their village neighbors (or BaMbuti, meaning Mbuti people) are well-known to anthropologists through studies by English, Japanese, American and German scholars. Although they have been cited as a classic example of tropical forest hunter-gatherers, their economic independence from village agriculturists has been much disputed. In the



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1920's and 30's, Paul Schebesta, a German anthropologist, noted in the first comprehensive study of the Mbuti their strong reliance on cultivated foods from the gardens of villagers, to whom the Mbuti were bound in a type of master-serf relationship. He expressed doubt that the Pygmies he saw could have survived without such foods. Perhaps the best known studies, however, are those of the English anthropologist Colin Turnbull, author of The Forest People (1961), who worked with a group of Mbuti net-hunters ca. 110 km southwest of our research area. Turnbull argued that the Mbuti were not dependent on their sedentary horticulturalist neighbors for basic staples but could live off the wild foods of the forest for extended periods. Although the Mbuti often chose to participate in a symbiotic relationship with the villagers in which each group provided the other with certain foods (bananas, manioc, game meat) and services (field labor, initiation and funeral rites), Turnbull described Mbuti culture as an independent entity, based on identity with and dependence on the forest.

The Ituri Project

The Efe are one of the least-studied and most isolated Pygmy groups, and the only one hunting almost entirely with bows and arrows rather than with nets. One of the goals of the Ituri Project, which began in 1980, was to document the subsistence practices of the Efe, as part of a broad study of their adaptation to a forest environment. The project co-director, Irven DeVore, had helped, during the 1960's and early 1970's, to direct the Harvard Kalahari Project, an ecologically-oriented study of the !Kung San (Bushmen) of the Kalahari desert in Botswana. The Ituri Project, one of the first comprehensive studies of human ecology, demography, and health and nutrition among tropical forest hunter-gatherers (and horticulturalists), was designed to build on and further explore some of the results of the Kalahari study. In particular, the Kalahari project had demonstrated major

reliance on vegetable foods, long-birth spacing, low fertility, and a high degree of personal and group mobility among desert hunter-gatherers. These conclusions were further corroborated by other studies of desert hunter-gatherers in Australia. Would these adaptations persist in the more stable environment of the tropical forest? Did the cyclical fluctuation of wet and dry seasons in the forest affect group structure and mobility in the same way as the seasonal changes of the desert? What were the major resource limitations for humans in this environment where most mammals are small and many dwell in the forest canopy? How independent were the Efe of their village horticulturalist neighbors, the Lese?

Since 1980, more than a dozen anthropologists and other researchers have come to the Ituri field station to gain a relatively long-term perspective on the cyclical fluctuations in the forest environment and on the ways in which the Efe and the Lese have adapted to this environment.

Researchers have observed a symbiotic relationship between the Efe and the Lese. For instance, two-thirds of the calories the Efe consume come from cultivated foods--bananas, manioc, rice, peanuts, sweet potatoes, and other plants--grown mostly in Lese gardens. Efe women, in return for these foods, assist the Lese in planting, caring for, and harvesting the gardens. Efe men help the Lese by clearing patches of forest for gardens and by providing honey, meat, and other forest products. In exchange, the Lese provide the Efe with such items as metal tools and clothing. Efe sometimes plant small gardens, but their mobile lifestyle, moving to a new camp every two or three weeks, is not compatible with the constant care that gardens require in the tropical forest.

Forest foods make up one-third of the calories in the Efe diet. These foods include wild plants such as yams and the olive-sized fruit of the

Canarium tree, honey, fish, and meat. Several species of duiker (small antelope) and monkey are their primary prey. Less frequently, they hunt animals up to the size of buffalo and elephant. Men, armed with metal-tipped arrows, hunt duiker by a variety of strategies. One method involves a man and dogs working together to flush out game while other men, carefully and quietly positioned, wait for duiker to come within arrow range. On other occasions, a solitary man waits in quiet ambush on a platform built in a tree of ripe fruit. Early in the morning and late in the afternoon duiker will feed on fruit that have dropped to the ground, and if lucky, the hunter will get a shot at the animal.

Monkeys are hunted with poison-tipped arrows, their wooden shaft carved to an extremely fine point. Poison, made from several forest plants, is applied to the tip and dried over the coals of a fire. To hunt monkeys in the forest trees, solitary hunters walk quietly and when within range of the animal shoot several arrows.

Despite the hunting skill of the Efe, we and other researchers find it difficult to imagine that the Efe could live in the forest in the absence of cultivated foods, on which they seem to rely quite heavily. Forest ecologists working elsewhere in the Ituri Forest were not able to identify year-round abundant sources of carbohydrates, comparable to the mongongo nuts and roots collected by the !Kung, among the wild plants gathered by the Efe. If cultivated carbohydrate-rich staples are essential to human existence in the tropical forest, then human occupation of the deep forest may be limited to the last 2000 to 3000 years since the domestication of African food crops.

The Archaeology of Present-Day Efe Life

As archaeologists, Helen's and my role in the project was to document the material remains of Efe life, as the

Harvard Kalahari Project had done for the !Kung (Yellen, 1977). My interest in hunter-gatherers came from my work with the material remains of prehistoric hunter-gatherers of the Great Plains; Helen and I had met at an archaeological site in Colorado while excavating bones of bison and mammoth, as well as stone spear tips and other artifacts left at the site by people long gone. The interpretation of these ancient sites, however, required some insight into hunter-gatherer ecology and behavior. Was this the kind of debris normally deposited near or in the family dwelling, or were these the kinds of bones and stone tools normally left at a kill? How much and what parts of the skeleton were usually left behind when a mammoth (or elephant) or other animal was butchered? How many people did a mammoth feed, and how often would one have been killed? What kinds of debris did other food-procurement practices generate? Can group size and organization be reconstructed from ancient debris-patterning? How is domestic space organized and used? By carefully observing the Efe, as they carried out routine activities at their campsites, we hoped to learn how to make sense out of the ancient pieces of bone and stone and other clues at archaeological sites to reconstruct what life was like in the past.

A central question concerns the degree to which hunter-gatherer camp design, activity patterns, and disposal practices are universal among all hunter-gatherer groups or are affected by different environments or cultural rules. Archaeologists had often assumed that tools and bones found together related to a single activity, spatially segregated from other activities. The Kalahari research, however, suggested that hunter-gatherer camps were small, closely spaced circles of ephemeral huts. Since most in-camp activities were conducted around the family hearth in front of the hut, debris from many distinct but spatially overlapping activities tended to be concentrated in a ring surrounding an open public space. Only messy activities were

carried out in "special activity areas" on the outskirts of !Kung camps. Since the size of the debris ring was proportional to the number of huts, it could be used to estimate the number of families and hence the population of a !Kung camp. If these patterns and others were also true of tropical forest and arctic hunter-gatherers, then perhaps the patterning could be used to understand the hunter-gatherer sites on the Great Plains 11,000 years ago.

The research that Helen and I carried out benefitted considerably from the work of other researchers on our project. Their studies give a detailed picture of Efe subsistence practices and of other aspects of their adaptations to the forest environment. Thus, we had a strong foundation from which to focus on material aspects of Efe life, in particular the spatial organization of their camps. We found that although each campsite is unique in the details of camp layout, all camps conform to a single broad pattern.



The first step in setting up an Efe camp is to clear away smaller trees and undergrowth. The size of these clearings ranges from 40 square meters to about 550 square meters, depending on the camp population. The number of people living at a camp ranges from about three to thirty-five or forty. Each nuclear family inhabits a dome-shaped hut made of a frame of saplings covered with broad leaves. Huts are situated near the perimeter of the camp in an oval layout. Each hut has one or more fires inside, for warmth at night, and a fire outside the hut near the door.

Trash heaps, located beside and behind the huts, are a feature of all camps. Initially composed of cleared brush, the Efe trash heaps continue to grow through the life of the camp as its inhabitants discard food remains, ashes from fires, and worn out or broken implements.

The placement of huts within a camp is strongly influenced by interpersonal relationships and kinship ties. Families that get along particularly well will situate their huts close together, while those that are feuding will place themselves a good distance apart.

The location of day-to-day campsite activities--preparing food, eating, making and repairing implements, socializing, and relaxing--conform to a pattern. Almost all such activities are performed inside of the camp perimeter. For safety reasons, applying poison to arrows is usually done outside of camp. Children's play takes place inside of camp and in some cases in a separate area cleared nearby.

The fireplace situated outside the doorway of each hut serves as the focus for many activities. Women sit beside the fire to prepare and to cook food. Men relax and socialize by the fire, and here they also get ready for the hunt, carving new arrowshafts, sharpening metal arrowheads, or strengthening their bowstave over the

hot coals. During a rainstorm, these activities are conducted inside the hut. Most of the debris generated by these activities eventually ends up on the trash heap.

Efe huts vary considerably in size. Floor area ranges from about 1.3 square meters to 13.6 square meters (the average is 5.1 square meters). To our surprise we discovered that the size of a hut does not correlate with the number of people that live in it. Some large huts had only two or three occupants; conversely, some small huts were the home of five or six people. A partial explanation might be that sleeping arrangements, especially among children, are fairly loose at Efe camps. One night the children may sleep in their parent's hut and the next night in their grandparent's. Even adults sometimes move around. And if one family moves away to another camp, an incoming family might inhabit the empty hut rather than build its own. This loose fit between hut size and number of occupants is distressing archaeologically; it means that archaeologists cannot estimate accurately the population of a camp on the basis of the floor area of individual huts. However, this loose fit might not be characteristic of other hunter-gatherer societies; further studies might be very illuminating.

The makeup of Efe camps is rather fluid. Families and individuals move in and move away during the lifespan of a camp. This flexibility seems to be characteristic of most or all hunter-gatherer societies. Sometimes, during the lifespan of a campsite, one (or more) of the families will abandon their hut and build a new one at the same camp. This behavior could confuse archaeologists into thinking that more families had lived at the camp than was the case, because there would be little archaeological evidence for recognizing that the same family had lived in two huts. Hence, the archaeologist probably would overestimate the number of families that had lived at the camp.

Efe reoccupation of a recently abandoned camp is another fairly common behavior that can lead archaeologists into overestimating camp population. Some families might reinhabit the hut they had previously lived in. Often, however, one or more families will build a new hut and leave their previous one unoccupied. The reason for returning to an abandoned camp goes back, at least in part, to Efe ties with the Lese. Although Efe move from one camp to another rather frequently, they usually do not move very far. Lese villages and gardens are a fixed point on the landscape, where Efe obtain material sustenance and social interaction. As a consequence, Efe rarely move more than a day's journey away from their affiliated village.

We discovered that when the Efe move camp, they sometimes leave behind a wide variety of possessions such as clay pots, glass bottles, baskets, and sharpening stones. They do this, we think, because of the restricted mobility that is characteristic of their settlement pattern. Clay pots, for example, are heavy and breakable compared to their aluminum pots. During the honey season, when they move deeper into the forest, the Efe might leave clay pots behind, knowing that they eventually will return to the vicinity of their previous camp and retrieve their belongings. It seems unlikely that other hunter-gatherer societies that have a more wide-ranging settlement pattern would practice this kind of storage to the same extent as do the Efe.

Comparing the Efe to other hunter-gatherers

The knowledge Helen and I have gained during our year studying the Efe has considerable potential for assisting archeologists in interpreting prehistoric archeological sites, with respect to questions such as the possible size-range of the population that made the site, the length of time the site was occupied, the nature of activities carried out at the site, and

the practice of storing implements. However, we must recognize that the patterns of the Efe cannot be casually generalized as a model for all prehistoric hunter-gatherer societies.

Comparisons with studies among other present-day hunter-gatherers, including the !Kung and various groups in Australia, reveal that although the Efe share many similarities with these peoples, some important differences set them apart. Similarities exist, for example, in the general layout of Efe and !Kung campsites. A !Kung camp consists of a circular arrangement of closely spaced brush huts, each hut the home of a nuclear family. As with the Efe and other Mbuti Pygmy groups, the distance separating huts in a !Kung camp is swayed, in part, by kinship ties and interpersonal relationships. A family fire is situated in front of the hut at a !Kung camp, and a wide variety of domestic tasks are carried out around the fire.

Differences between Efe and !Kung camps emerge in some details of layout and use. Trash heaps are not a feature of all !Kung camps; those occupied for less than two weeks might lack them altogether. !Kung campsites tend to cover a larger area than Efe sites, and the amount of camp space per person is greater among the !Kung. Habitation sites of Western Desert Aborigines in Australia far exceed the Efe and !Kung in both of these attributes. And, when !Kung move out of a camp, they leave behind few or no possessions for future re-use other than nut-cracking stones.

One of the great challenges facing archaeologists today is to explain the similarities and the differences among hunter-gatherer groups. Recent studies have suggested that the much greater size of Australian Aborigine campsites compared to !Kung campsites is related to the freedom from fear of natural predators in Australia. The Kalahari Desert, on the other hand, is home to several dangerous animals including lions, leopards, and hyenas. This explanation probably does not

account, however, for the small size of Efe campsites. We never heard Efe express anxiety about predators--in fact, the greatest danger comes from falling branches or trees. More likely, they build compact camps to keep within sight and sound of each other, thus maintaining a physical and emotional cohesiveness in the dense forest.

If we could spend another year in the Ituri, what questions would we address? We would like to explore the way material goods move or are exchanged between the Lese and the Efe and among neighboring Efe bands. Which objects are owned individually and which are treated as communal property? What factors influence the size of huts and of domestic space if not the number of occupants? These and other questions will continue to draw archaeologists such as ourselves to the Ituri, the Kalahari, the Arctic, the Australian deserts, Malaysia, and other areas to study living hunter-gatherers.

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