The escarpment of the Jos Plateau seen from the south. The Kofyar peoples live in the hills and also occupy adjoining land on the plains.

The map of Africa and Nigeria shows the area of Kofyar settlement. The line drawings of Kofyar women's houses are by Dr. Masao Yamaguchi, an anthropologist of the Tokyo University of Foreign Studies, and we are grateful to him for permission to reproduce them here. All photographs are the author's. Field research in Nigeria was supported by a Ford Foreign Area Studies Fellowship and a grant from the Social Science Research Council.

—R. N.

**KOFYAR BUILDING IN MUD AND STONE**

**By ROBERT NETTING**

The Kofyar are a tough, hard-working, notably independent people living in Northern Nigeria. They are hill men whose individualism seems rooted in the rugged land they inhabit and reflected in their distinctive architecture.

The dispersed settlements of the Kofyar occupy a range of hills on the southern edge of the Jos Plateau and a narrow band of plain at the foot of the plateau escarpment. The precipitous granite slopes laced with narrow stream valleys and punctuated by old volcanoes shelter a surprising number of ethnic groups whose cultures and interrelations are not yet well known. All of them are lumped together as "hill pagans" in the meager literature, emphasizing both their geographical isolation from the rolling savannas which characterize Northern Nigeria and their adherence to local religious traditions in the face of the prevailing Islamic in the neighboring Hausa-Fulani kingdoms.

Traversing the 75 mile east-west border of the Plateau on foot (and there is no other way to make the trip), one passes through the territories of at least a dozen different peoples, each with its own traditional clothing, house types, farming methods, social organization, and language.
Though these units might be called tribes, they had no tradition of internal political unity and they organized for defense and economic cooperation as independent villages. Though the Kofyar who now total over 70,000 people acknowledge broad cultural similarities and remote common ancestry within their 200 square mile territory, they have no generic name for themselves and are always ready to point out the variety of dialects, crops, circumcision rites, and personality traits which set villages apart.

Certainly this flourishing diversity was promoted by the topography of Kofyar country. The Plateau has been called a refuge area, and it is obvious that the rock-strewn scarp offered protection from the mounted slave raiders and jihads of the expanding plain states. There is no evidence that the Kofyar were ever conquered until the British entered the area around 1909. As recently as 1930, a Kofyar village resisted colonial tax collection efforts by fatally stoning an administrative officer. Natural barriers sheltered the Kofyar from external enemies, but periodic feuding characterized inter-village relations. The men of each village armed with locally forged throwing spears, clubs, and buffalo hide shields could be summoned by war horns to fight off attackers bent on pillaging the food reserves or avenging a murder. Most hill villages were entered by narrow trails up steep slopes or through ravines. Where an approach was not naturally defended, stone walls might be erected.

In wall building, the Kofyar use untrimmed rocks and small boulders. These are carried from the fields and stream beds by men and boys. A group of men working together fit the stones roughly to each other. An inner and outer face of stone are built up, slanting in slightly toward each other and enclosing a core of packed earth. No mortar is used. A wall (gen) almost 400 feet long and averaging six feet in height guards the eastern flank of Bong village. The Bong people claim that the wall required two years of intermittent work by themselves and several allied villages to the south. It was undertaken during the course of a twenty-three year long war which began about 1890. A shorter semicircular wall at the base of a volcanic cone was used as a last-ditch defense by the Bong community, and their stories tell of being besieged there in the 1880’s.

Though walls for military purposes are no longer necessary, the same building techniques...

SUMMER, 1968
are used for domestic purposes. In order to support a relatively dense population in the hills where arable land is scarce, the Kofyar practice a highly developed intensive agriculture. Whenever possible, their slopes are terraced with single-thickness stone walls retaining level benches of soil. These range from one to two feet in the bush fields outside the villages to massive walls up to eight feet high near some homesteads. Most of these retaining walls are said to have been built during a time by individual families improving their properties. When necessary they are repaired by voluntary work groups rewarded with beer by the owner of the field.

Not only must Kofyar fields be protected from erosion and rapid drainage by terraces but they must also be regularly fertilized with manure and compost to restore soil fertility. This material is collected in a circular corral (sali) located near the entrance to every homestead. For nine months of the year, goats are kept staked within this enclosure and fed on grass and leafy branches brought to them by household members. The unused remains of the green material bed down with goat dung to form a black, partially decomposed compost that is spread on the homestead fields just before the coming of the annual rains. A somewhat larger corral is made for the nighttime stalling of the dwarf cattle which a few wealthy Kofyar own. A corral which I saw under construction at Darniyel's homestead had five-foot stone walls tapering from two and one-half feet thick at the base to one or one and one-half feet at the top. It was solidly founded on large stones. Earth was dug out to a depth of about two feet in the center of the circle, loaded into baskets, and tamped down as fill in the wall itself. A narrow entrance was lined with large rectangular stones carefully joined so there would be no projecting edges to snag the animals going in or out. The wall enclosing a space about fifteen feet in diameter was capped with smooth flat stones, protecting the earth core and forming a shelf for sitting at the edge of the courtyard where most household activity takes place. Sixty-three men comprising most of the adult male population of Bong village and five women worked for four to five hours on the construction.

Kofyar walls are simple, strongly made structures which served both to protect them from enemies and as part of the technology of effective farming in the hills. Defensive walls contributed directly to the maintenance of political independence for the village. The self-sufficiency of each subsistence farmer was dependent partly on his terraces and his corral. A sedentary agricultural people must also be concerned about shelter for themselves and their animals and preservation of their goods—stored food, tools, clothing, and wealth. Domestic architecture among the Kofyar shows elaboration and ingenuity evident nowhere else in their material culture. The typical Kofyar homestead presents the outward aspect of a miniature fort. It is essentially a tight cluster of round mud huts with conical thatched roofs. Called korayping (cf the rock), it is often placed on a hillside site and aligned so that water will flow from the courtyard down a channel between the huts and out a drain at the rear. Each homestead is surrounded by its own fields of an acre or two growing millet, sorghum, beans, vegetables, and root crops. There may be a scatter of oil palms on the garden land, and shading the homestead courtyard may be a mango tree with a few sprawling papayas. During the rainy season from April to October, the low huts are practically hidden behind the luxuriant plant growth, but after harvest the house groups reappear, separated by open fields and threaded together by a network of paths.

The Kofyar have never formed nucleated, closely settled villages like the Hausa or Yoruba. They live dispersed over the landscape in the midst of their fields, both for ease of agricultural work and for protection from the prying eyes of neighbors. Their huts are entered from a passage which connects with the court-

yard where the household cooks, pursues crafts, rests and gossips in the shade of the big grain-drying rack. A rough wall of heavy stones laid herringbone fashion blocks the narrow openings between huts, and only a few small round windows break the solid facade of the homestead. An extension of the roofs from each hut covers the internal passageway, and the hut of the household head (wupinma) guards the entrance. Near it may be a cylindrical hut with a tiny opening for chickens and a low hut for keeping the wood ashes as fertilizer. Along the passage or connected to it by short side-aisles are other huts, one each for the wives of the head, a goat barn, grinding house, and at the foot of the line, a brew house with its sunken vats. Some dwelling huts may be multi-purpose, housing adolescents or aged relatives, storing foodstuffs, or used as indoor kitchens.

The Kofyar word for house, la, is often translated as "room," and indeed these individual structures function as rooms in a larger house. The average household is small, consisting of about five members, and the most usual form is the nuclear family with a man, his wife, and their children. As more wives are added through polygynous marriage or as the household is enlarged...
by children, a son's wife, or relatives, more huts are built. Very large homesteads may be a maze of passageways. On the other hand, widows or elderly men may live alone, preferring to stay in a hut or two of their own rather than moving in elsewhere as dependents.

Domestic structures among the Kofyar provide both physical shelter from the elements and a sort of social insulation from other people. They emphasize the responsibility of each household for its own welfare, the husbandry of its resources, and its strong sense of economic independence. A farmer who cannot preserve enough grain and other foods to feed his family from one harvest to the next is in serious trouble. Kofyar houses and granaries share many distinctive features, and it is plain that a primary goal of architecture is to seal out destructive influences in the environment. The Kofyar must cope with moisture, wind, cold, and vermin. Some sixty inches of rainfall a year is concentrated in six months and often falls in heavy, driving storms. Dusty winds from the Sahara blow with considerable force during the harmattan season in December and January. During this period and also in the rains, nights may be chilly, especially in the hills 3500 feet above sea level. Stored cereals are rotted by moisture and must also be kept free of insects and rodents. To meet these requirements, the Kofyar have elaborated on the basic pattern of a mud-walled cylinder by extending the shell of the house up and inward to form a mud dome. An impervious ceiling under the thatch, in addition to hand walls and floors, blocks wind and damps the beetles and rats which infest ordinary grass roofs, and helps to keep the interior snugly warm. Not all huts are made in this manner, but it characterizes the most interesting Kofyar house, the woman's hut or melere.

Building operations are often preceded by the demolition of old or decrepit habitations. The roofs are removed and the walls knocked down and beaten into powder with heavy tree-trunk pestles. Often a wrecking crew of friends and neighbors is called in for this task. The materials of the old house are thus incorporated into the new, avoiding the need to dig soil from the fields and gather stones. (Such practices might conceivably complicate the dating problems of a future archaeologist on the site.) The young men in the work party also bring water and mix the mud which is left in a moist heap for future use. Either men or women may perform the final preparatory job of treading ahu straw into the puddled material immediately before building.

The Kofyar use two techniques of building in mud. Hut walls are usually made with alternate courses of mud and stone. A ring of large stones is laid first as a foundation. The builder moistens his hands, the stones, and the mud. He then places large clumps of mud on the stones, pushing them down with his fist and the second joints of his best fingers. More mud is thrown sharply against the sides of the wall to fill up remaining cracks between the stones. The builder smooths the ring of mud with his fingers and puts on top of it a course of smaller stones. These are covered in the same manner, and there are built up a series of superimposed rings about six inches thick which remain visible from the outside. Bent reeds or cornstalks provide forms for doors. When the wall has reached its maximum vertical height and is to be curved inward in the process of dome construction, a different method is used. A thin unreinforced fabric of mud is shaped by hand. A band of only six inches to a foot can be applied at one time. This must dry before another course overlapping and extending it can be added.

The same mud-on-mud technique is used to shape the large free-standing granaries made like giant jars up to two feet in diameter inside the huts. They are molded upward from a single stone pedestal which remains exposed so that termites cannot tunnel from the floor to infect the stored millet, ahu, or peanuts. Another type of granary is erected as a separate structure with a circle of bare stones separating an open uility chamber below from the grain magazine. A shallow convex floor is surrounded by a jag-shaped top. The only opening in most Kofyar granaries is the manhole in the top, and this can be closed with a large basket or a clay plug.

Any Kofyar man can build a hut, and a household head aided by his family does much of the work on his own homestead. Women help with the mixing and carrying of mud as well as with final thatching. A local expert may be engaged, however, for the construction of a woman's house. These are literally granaries for living, and it is not accidental that the roof mel (granary) occurs in the name, meleng. The meleng, some 12 feet in diameter and 12 or 15 feet high, is remarkable both for its several levels of unsupported mud work and for its intricate variety of built-in fix-
The meleng or women's house is the most elaborate of Kofyar dwellings. Internal partitions (upper left) with geometric designs (lower left) form the bases of shallow mud arches which support the second floor (upper right). The first floor is given a smooth hard surface with a grinding stone imbedded in it (lower right).

The sleeping room of the meleng on the second level has a variety of built-in furnishings: (A) granary; (B) fireplace; (C) shelf for grain above fire; (D) bin for storing ashes; (E) entry hole from first floor; (F) mud platform bed; (G) mantle shelf with decorated back; (H) insert of floor plan showing bed with holes for valuables (bottoms), granaries forming sides of fireplace (top).

The walls of the meleng are of scored mud, and the roof is thatched with grass. The eaves are supported by wooden posts, and the door is of reinforced mud, with a wooden slab hinged on two pivots, and a smaller slab hinged on another pivot. The door is usually left open, and the entrance is only partially covered. The interior of the meleng is divided into two sections by a partition, with a small door leading to a narrow corridor. The partition is made of mud and sticks, and is decorated with geometric designs.

The floor of the meleng is made of smooth, hard mud, and is covered with a layer of earth. The walls are made of mud and sticks, and are decorated with geometric designs. The roof is thatched with grass, and is supported by wooden posts. The door is of reinforced mud, with a wooden slab hinged on two pivots, and a smaller slab hinged on another pivot. The door is usually left open, and the entrance is only partially covered. The interior of the meleng is divided into two sections by a partition, with a small door leading to a narrow corridor. The partition is made of mud and sticks, and is decorated with geometric designs.

Even without the use of blankets. Heat at the base of the granaries helps to keep the grain dry. The top of the fireplace is formed by peeled poles providing a rack where maize cobs or unhulled millet and sorghum may be kept in the smoke and heat which discourage insect depredations. In those villages where sorghum is the major crop, a larger pole platform used for the same purpose may be incorporated into the floor of the bedroom level. The area around the fireplace and at the head of the bed is honeycombed with niches, receptacles, and shelves called guruk. Cabbage, leaves and roots for making sauce, seasonings, gourds of oil, and items of clothing are neatly stored there. A sunken area holds cooking pots and seed storage jars stoppered with mud. Money or other small valuables may be kept in hollows in the bed surface which are covered by the sleeping mat. A bin holds wood ashes. In the dark recesses behind the granaries, jars and boxes may be concealed. To complete the list of conveniences, the Kofyar build an old piece of pottery jar into the side of the bedroom wall in such a way that the narrow neck projects outside the house. This provides the occupants with a urinal and is considered particularly handy after a long beer party.

By scaling the fireplace wall of the meleng and a decorated mud ledge behind the mantle, then standing on a semicircular platform, one can reach the thatch cup closing the hut's skylight aperture. This heavy cover can be tilted at an angle to allow light to enter and smoke to escape, or it can be replaced to block the rain. Bands of geometric decoration ring the top of the dome. Similar patterns are used outside as a squared arch framing the meleng's door. This may in some cases be daubed with alternate lines of red ochre, black soot, and white earth. The only other embellishments of the meleng façade are curved mud projections on the walls for supporting brooms or hanging up shoulder bags and sashes. These are whimsically referred to as dup uk, elephant penises.

The final stage of hut construction is the thatching. Before the bush fires of January, the Kofyar cut long grass with their stubby sickles.
and head-load it back to the village. While women make long, loose mats of grass, the men climb forked sticks leaned against the hut walls and adjust the mats in spiral fashion around the rafters or dome. They are made fast with dampened palm leaf ropes. The lowest of the eight or ten tiers are reversed so that the feathery tops of the grass trail far out from the hut sides to carry the streams of rain water safely away from the mud walls. Neighbors cooperate in this work, going from one homestead to another on successive days.

As a storehouse the meleng is both capacious and secure. A roof fire might drive out the occupants, but the dome would often protect their belongings. The traditional round door some two feet above the ground could be tightly closed with a basket and even when open it effectively barred most domestic animals. More recently, rectangular wood-frame doors of flattened kerosene tins have become popular because they can be padlocked. If rats invade the meleng, the exits are closed and a fire made of the dried male efflorescence of the oil palm. This asphyxiates the vermin and is responsible for the shiny black patina on the interior walls. Termites are a more difficult problem, but the Kofyar claim they will not enter a warm house. Magical protection is provided by putting a hair of the cane-cutter rat near any termite holes.

With its constricted openings, partitions, and multitude of hidey holes, the meleng would be a difficult place to rob. Most women keep a knife close to their beds, and it is certain that intruders would find themselves at a disadvantage. The Kofyar, however, most frequently emphasize the secrecy of the meleng—it is "a place to hide things." There was in the past a great deal of social utility in such architectural arrangements. A woman did most of her cooking inside the house and might even pound grain in a small mortar there. Her peanuts, millet, and acha were kept in granaries there. The Kofyar aver that in the old days of higher population and inter-village feuding, food was considerably scarcer than it is now. A woman wished to protect her supplies and to conceal her prepared food from others. A favorite wife might receive clandestine gifts of oil or meat from a husband or lover and wish to keep this knowledge from her co-wives.

In Kofyar, etiquette requires that anyone who asks for food should be given it. Nevertheless, by cooking in secret and feeding herself and her children in the privacy of the meleng, the prudent housekeeper could keep such requests to a minimum. Though a wife might take food to her husband and announce politely to all present that the meal was ready and everyone could eat, she did not expect that other family members would accept the invitation nor were they encouraged to examine her food. It is usual for any woman brewing beer to put some aside for a quiet evening gathering of family or friends in the meleng's upper room. Emphatic public denials that any drink remains are often followed by discreet invitations to a select party inside. Privacy is also required for sex, and Kofyar men share the beds of their wives in the meleng. Though not prudish, the Kofyar feel that making love out of doors lacks decorum as well as comfort.

The care with which the meleng is designed, the decoration which adorns it, the construction by a specialist—all point to the high value which the Kofyar give to this house and distinguish it from ordinary dwellings. Life centers in the homestead and those things which support life—daily food, the fire's warmth, the woman who is wife and mother—are conserved and sheltered by the meleng. The Kofyar are quite positive in affirming that a man and his wife should set up housekeeping in their own homestead. People work harder, they insist, if they must rely on themselves for subsistence and protection. The state of a man's terraces, his corral, and his huts proclaims his character and shows his ability to live as an independent and productive member of the community. For the Kofyar, good walls do indeed make good neighbors.

ROBERT NETTING is an Assistant Professor in the Department of Anthropology, University of Pennsylvania. He has spent two periods of field work among the Kofyar, most recently in 1966-67. The extensive terracing of the Kofyar Hills and the practice of intensive agriculture there originally stimulated his interest in problems of cultural adaptation to the environment. The results of his studies in settlement patterns, work group organization, and land tenure are soon to be published as Hill Farmers of Nigeria.