

■ NIGERIA

Ethnoarchaeology of architecture of storage facilities at Dufuna, Yobe state, Northeast Nigeria

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Introduction

Ethnoarchaeological inquiries are always aimed at studying "material culture in systemic context, for the purpose of acquiring information, both specific and general, that will be useful in archaeological investigation" (Schiffer 1978:230). This very feature of ethnoarchaeology which emphasizes the study of ongoing behavioral systems, gave rise to the concept of "living archaeology" (Schiffer 1978:231). Even though living archaeology is an apt designation, it lacks the generality of ethnoarchaeology, which includes a study of both archaeological and systemic context. This paper investigates the architecture of storage facilities at Dufuna from an ethnoarchaeological perspective, giving an insight into the method and process of preservation of food grains by the colonisers of this environment.

Dufuna, a village in Yobe state, Northeast Nigeria, lies at 12°16'53" N and 11°10'52" E, and is where an ancient canoe was discovered, which is over 8000 years old. It is situated beside a branch of the Komadugu Gana between Potiskum and Gashua (Breunig 1996). Dufuna village was occupied by the present settlers, the Takari, a migrant agriculturalist and fishing community from Gobir in Sokoto state about the year 1966. Their purpose here is to exploit the vast agricultural land and fish along the Komadugu river (Garba et.al. 1988). The methods and processes involved in creating storage facilities at this site are germane to historical archaeology, since they re-enact and simulate past technological practices. This paper highlights the ingenuity of the society as reflected in their architectural technology. This paper was predicated by Gronenborn's (1997:431-439) article on, "An ancient storage pit in the S.W Chad basin, Nigeria" which examines "the evidence of storing of plants

food in the Nigerian part of the Chad basin from sites dating to a time span ranging from 2200 to 400 B.C. (cal.)". He discovered that similar storage facilities have been used up to present. He also classified various storage facilities that may have been used in antiquity up to the contemporary period.

The Field Investigation

On 19th November 1997, I commenced an investigation of the architecture of storage facilities by interviewing Bulama Abdulmumini of Dufuna who invariably was involved in the construction of storage facilities before he became the village head. Today the frontage of his house is remarkable for the presence of massive granaries, some capable of containing 50 to 100 bags of grain, each comprising 50 kg. Currently there are four massive granaries belonging to the village head suggesting a person of important social status in monopoly of surplus of production. Almost each compound in Dufuna had at least 2-4 medium size granaries either placed within or outside the compound. All these point to the farming or productive strength of the community. During the field investigation, the Bulama indicated that virtually all male adults in the village possess the technological ability to design and execute the construction of a granary of whatever type and dimension.

Types of Storage Facilities

Four types of storage facilities had been in use since the occupation of the settlement by the Takari. One of these is now obsolete and is no longer constructed. It had been the most commonly constructed storage facility at the settlement before it was abandoned by the aboriginal people, the Ngizim. The three other types of storage facilities are still used, but prominence depends on situation. Whereby one type is preferred because of its longevity, while the other is desired due to its simple and less time consuming during construction. The four storage facilities are classified as follows. (1) Rehewa. These are massive granaries usually constructed of clay procured from within the river bed of the Komadugu Gana. (2) Baremi is the least utilised storage facility today, but are of archaeological relevance since they often surface in excavations. These are often sampled for palynological

data to determine the food species in use. This type of storage facility is a pit storage used by the autochthonous Ngizim community of Dufuna. (3) Rumbu is the most popular granary among all the Hausa communities. It is made up of thatch (corn stalks) materials. (4) Randa is usually a massive pot more akin to the sao type in size, built purposely for the storage of grains. This storage facility is more of an exclusive preserve of women.

Architecture of the storage facilities

This section will highlight the various processes involved in the production of the four types of storage facilities mentioned above.

Rehewa Granary. In order to effectively construct this type of granary (Figure 1), branches of *kiry*a shrubs (*Prosopis africana*) are cut into pieces, virtually at equal heights as a prop (stand) on the ground. *Sabara* shrubs (*Guiera senegalensis*) are then placed on top of the props and this is supplemented by corn stalks which are equally spread evenly on the prop. Molded clay procured from the river bed are administered over the laid out patterns. This is left for a few days to enable it dry up and subsequent construction can then recommenced. The structure is elevated in a gradual manner in a circular form, until it reaches the final stage of completion, with an aperture at the uppermost level. *Baibaya* (conical thatch) is constructed and placed at 3/4 of the uppermost level of the granary. *Kutubu* (thatch lid cover) is placed over the *baibaya*. Three to four weeks is sufficient to achieve the construction of a massive granary. Banded grains placed in the granary can be reached not only from the top aperture, but also from the improvised opening along the granary body, especially when the contents of the granary goes down to a level difficult to reach and lift through the top aperture. The improvised opening along the granary body is always sealed off with a strong sealant, particularly a piece of corrugated iron sheet. As soon as the contents are emptied the normal usage of the upper aperture resumes. A granary of such type is capable of containing 1000 *dami* (bands) which when threshed might result in between 50 to 100 bags of 100 kg.

Storage Pits. In Dufuna, a storage pit (Figure 2), is usually 2-3 m deep and is sunk with a rhomboid opening from the base. A thatched mat is placed

inside, followed by *kaikayi* (husks) of millet which are spread in between the thatched mat and the pit boundary. Grains are poured in to the pit until they reaches the upper level. The grains are then sealed off with millet chaff, being superimposed by husks. This is covered finally by soil. Nothing can penetrate the soil and reach the stored grains. In some places where clay soils are obtained they act as better sealants from rainwater (see Platte and Thiemeyer 1995 in Gronenborn 1977:435). The logic behind laying the thatched mat at the initial stage of construction within the pit is to protect the grains from the loose pit earth and concealed it from insects (Connah 1981:70). Husks and chaff were used to protect the grain from humidity which could easily destroy it. The chaff acts as a shield underlying the backfilled earth. This type of storage pit can last up to 5-10 years as it is constantly being reworked and re-used "during each season shortly before the time of harvest" (Gronenborn 1997:435). In Dufuna this type of storage facility today is less preferred or virtually abandoned and preference is given to granaries raised above the ground level. This is due to persistent destruction caused by submerged water from the Komadugu river bed. In figure 2, both chaff and husks are represented at two levels of the pit context. This is due to the fact that at the under ground level, they are both used as shield against earth and insects, while at the upper level they are used as sealants from the earth and insects from above.

Rumbu (thatched granary). This type of granary (Figure 3) is the most simplest and its construction usually takes place after each year's harvest. It has the same method of preparation with the *rehewa* granary, but with little variation. It takes one week to construct but its lifespan does not go beyond 1-2 years, but most often because of its least effort in construction, it is renewable every year. The construction takes the following pattern: Props of *riry*a (*Prosopis africana*) are placed as stand on the ground and on top of it intertwine network of *Guiera senegalensis*, and over it corn stalks are spread. Construction can begin from this stand upwards by intertwining the thatch in a mat pattern, until it reaches the upper level where *baibaya* is constructed and *kutubu* placed above it, thus concealing the grains.

Randa (massive pot) granary. This is a pot in real sense, but it is massive in nature, specifically con-

structed for the storage of either water or food grains particularly by women. The process of its construction is similar to any pot formation (Hodges 1964). This type of granary is an exclusive preserve of the women. It can contain 2-3 bags of

100 kilogram weight content. It is usually kept within the women's room as a reservoir for the women's grain. For details of a typical massive pot granary more akin to the sao type pottery (Connah 1981:56-57).

Figure 1. Rehewa granary.

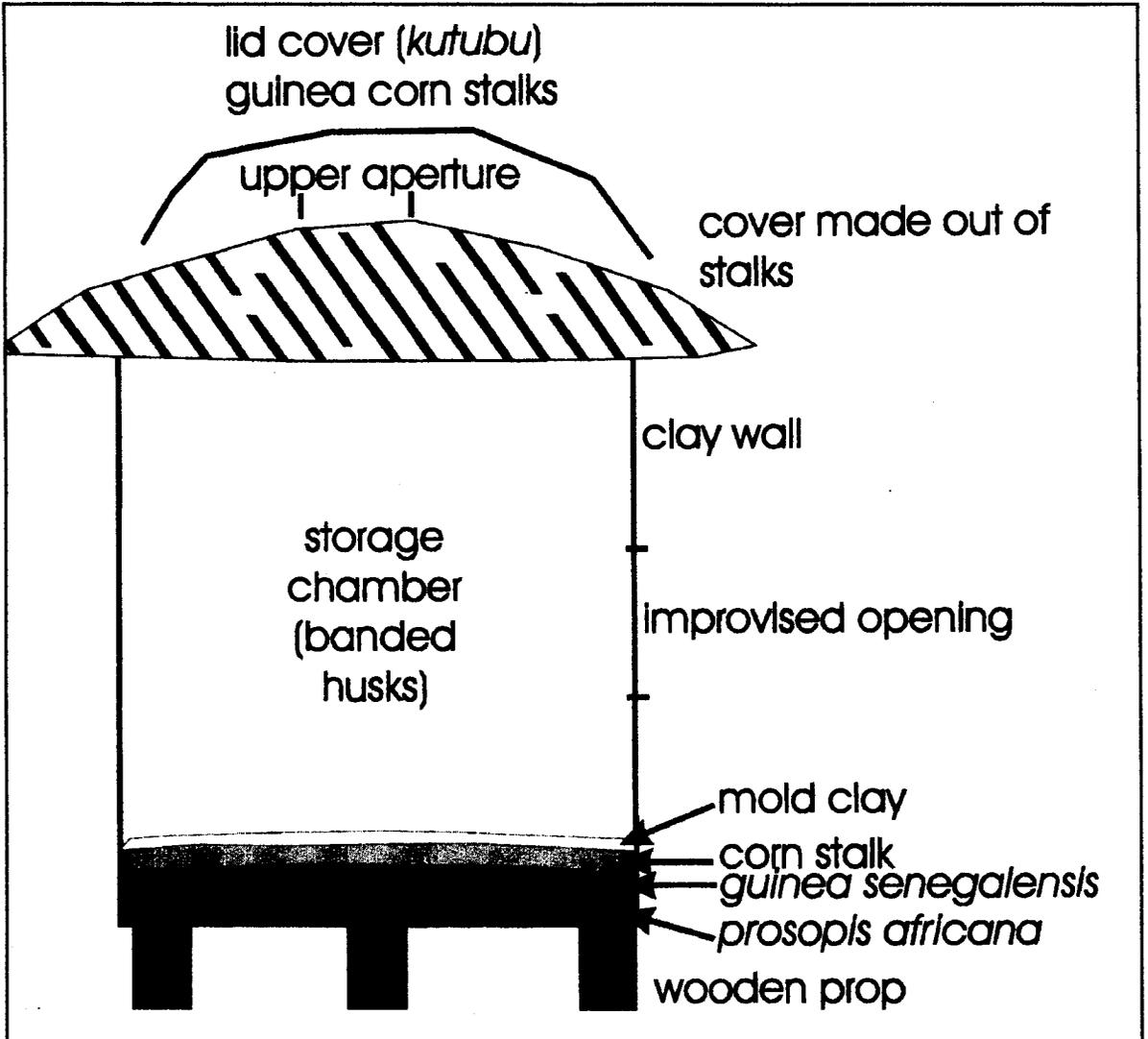


Figure 2. Dufuna storage pit.

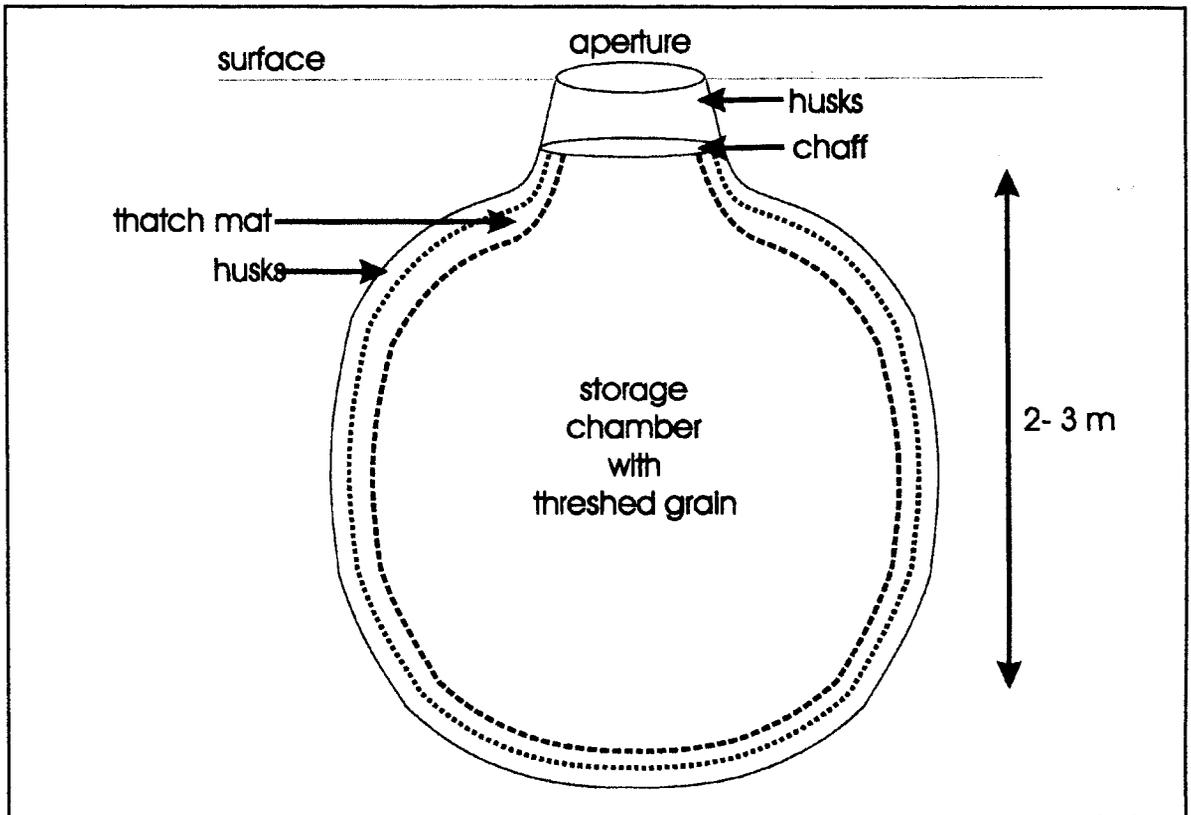
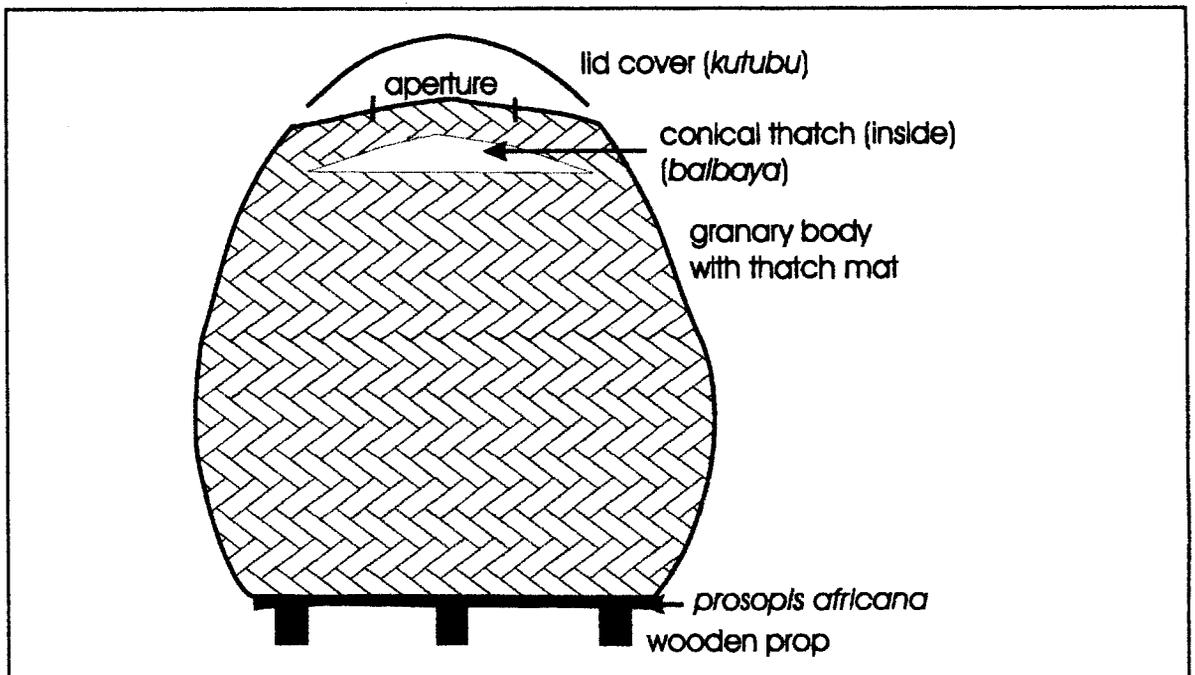


Figure 3. Rumbu granary.



References cited

Breunig, P.

- 1996 The 8000-year-old dugout canoe from Dufuna (NE Nigeria). In: G. Pwiti and R. Soper, editors, *Aspects of African Archaeology*. Harare: University of Zimbabwe Publications, pp. 461-468

Connah, G.

- 1981 *Three Thousand Years in Africa. Man and his environment in the Lake Chad Region of Nigeria*. Cambridge: Cambridge University Press.

Garba, A., Y. Mukhtar and I. Waziri

- 1988 Research guidelines on Dufuna canoe discovery project. Unpublished manuscript. Center for Transsaharan Studies, University of Maiduguri.

Gronenborn, D.

- 1997 An ancient storage pit in the SW Chad Basin, Nigeria. *Journal of Field Archaeology* 24: 431-439.

Schiffer, M.B.

- 1978 Methodological issues in ethnoarchaeology. In R.A. Gould, editor, *Explorations in Ethno-Archaeology*. Albuquerque: University of New Mexico Press.