

# A HOARD OF STONE BEADS NEAR LAKE CHAD, NIGERIA

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*In 1980, a small pot containing 622 carnelian and quartz beads was found accidentally at Ala, in the Nigerian part of the clay plain south of Lake Chad. It appears to constitute a hoard of wealth which its owner buried and subsequently failed to retrieve. Beads of this sort first appear in this area in the second half of the first millennium A.D., but also occur in second-millennium deposits. However, they are usually found as grave goods, and the Ala discovery is almost the only example of a hoard of such beads known to the author. Their presence on the stoneless Chadian plain indicates the development of trading contacts with other areas, but neither the source of the raw materials nor the place of manufacture of the beads is known. The quartz could have come from the Cameroon Mountains but the origin of the carnelian, often assumed to be from India, remains problematic. More attention needs to be paid to the possibility of West African sources and production, but there is also an urgent necessity both to compile a corpus of firmly dated material and to conduct characterization studies that could throw more light on the origin of the carnelian.*

## INTRODUCTION

The concept of the archaeological hoard—a collection of valued objects hidden by its owner who subsequently failed to recover it—is well known in many parts of the world. In societies with monetary economies based on coinage, such hoards often consisted of collections of coins buried in some sort of container which may or may not have survived. In societies without coinage, accumulated wealth could take a variety of forms, beads among them. Light in weight relative to their value, easy to transport, durable, much sought-after as personal adornments and for ritual use, their continued value, particularly if they were of glass or semi-precious stone, was usually assured. In tropical Africa, for instance, the past importance of beads is clearly apparent from the writings of 18th- and 19th-century European travelers

who frequently carried them to use as payment or as gifts. Thus, Mungo Park, setting out from the Gambia in 1795, carried provisions for two days as well as “a small assortment of beads, amber, and tobacco, for the purchase of a fresh supply, as I proceeded” (Park 1951:85). Several months later, virtually destitute, Park (1951:116) “had not one single bead, nor any other article of value in my possession, to purchase victuals for myself, or corn for my horse”. Given their apparent value, it is hardly surprising that beads are regularly found among the grave goods of African burials dating to the last 1,500 years or so. The discovery of hoards of beads appears to be much less common, probably because they are most likely to be found by accident and the recovery of such saleable material is unlikely to be reported to the relatively few archaeologists around. This makes the hoard of stone beads discussed herein particularly important. Indeed, the author has been able to find only one brief published reference to a similar case in the region from which it came.

## THE SETTING

Lake Chad sits astride the dry savanna that stretches from west to east across the African continent south of the Sahara Desert. The center of an inland drainage basin, it has been subject to both long-term and short-term fluctuations in size so that for approximately the last 3,000 years, there has been an extensive plain of lacustrine clay situated particularly to its south. This plain occupies parts of northeastern Nigeria, northern Cameroon and southwestern Chad, and is subject to annual inundation due to the marked seasonality of its brief wet season and the impervious character of its soil. In spite of a long, hot dry season, this has enabled the area

to become important for grain growing, particularly of sorghum, some of which depends on the retained moisture in the soil following the recession of the floodwater. In addition, livestock husbandry, of cattle, sheep and goats, is important.

Archaeological research has indicated that the area has been occupied by people for the last three millennia, resulting in the formation of substantial and numerous settlement mounds, of which no less than 822 have been recorded (e.g., Breunig, Neumann and Van Neer 1996; Connah 1981, 1984; Gronenborn 1996; Gronenborn et al. 1996; Holl 1996). The subsistence economy of the area seems to have been basically the same throughout the occupation of the clay plain, although rice and millet appear to have been the important crops in earlier times (Neumann, Ballouche and Klee 1996), and hunting and fishing probably contributed more to the diet than is now the case (Gronenborn et al. 1996). The earliest use of iron was in about the 1st century A.D.—according to evidence from the almost 11 meters of deposit at the Daima mound (Connah 1981:146-147)—so that prior to that time, artifacts had to be made of stone or, more commonly, bone. The reason for using the latter was that the clay plain is completely stoneless; at Daima, for instance, stone used at the site had been brought from places 75 km to at least 200 km away (Connah and Freeth 1989:19). In such a context, the presence of glass or stone beads is of considerable interest because the appearance of such exotic materials suggests that long-distance trade was beginning to penetrate the area. At Daima such beads only really appear for the first time in the second half of the first millennium A.D., usually with inhumation burials. This is the background against which the hoard of stone beads discussed in this paper must be viewed.

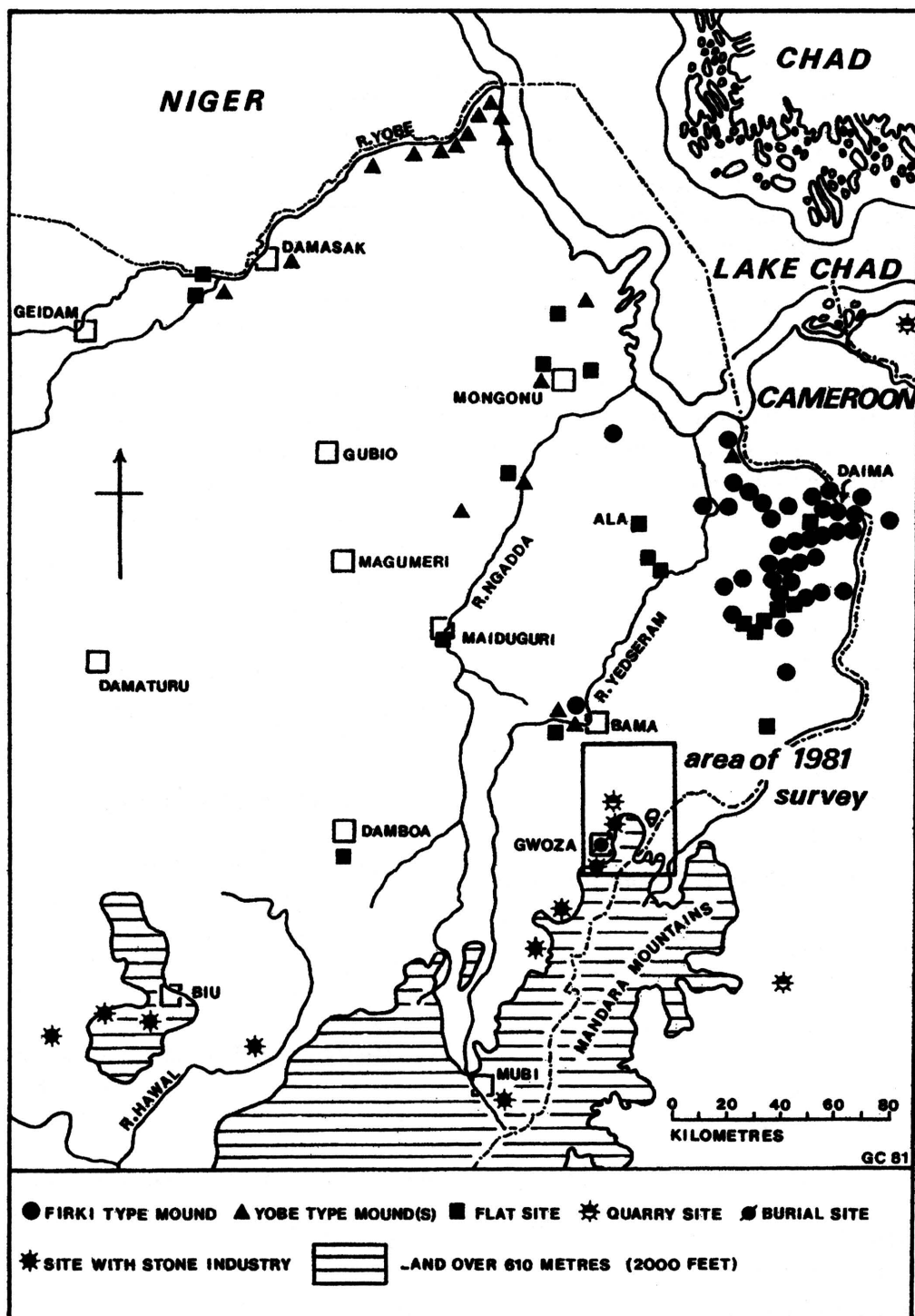
## THE HOARD OF STONE BEADS

The hoard was discovered during the wet season (normally about July to September) of 1980, near the then settlement of Ala, in northeastern Nigeria (Fig. 1). This place lies on the clay plains to the south of Lake Chad, in an area where the Chad Basin Development Authority at that time had an extensive irrigation scheme under construction. Magara Adam, a workman employed by the Authority, was digging holes for tree

planting along the sides of a new bitumen road that runs towards Ala from the Maiduguri-to-Dikwa road. At a spot south of the settlement of Ala but within sight of it (at approximately 12°11' N. and 13°52' E.), he found a small pot in a gully by the side of the road. It is unclear whether he found it eroding from the side of the gully, or whether he dug it up accidentally in the course of digging a tree hole. However, the former seems more likely because the pot was recovered unbroken with an intact earth fill. The pot was subsequently given to Mrs. Nan Wedderburn, a British woman resident in Maiduguri who had lived in the north of Nigeria for many years. A person conversant with the most commonly spoken local language, Kanuri, she was known to be interested in the history of the pre-Colonial state of Borno, of which the area had formed a part, and it was presumably for this reason that she was given the pot. At that time there was no resident archaeologist anywhere in northeastern Nigeria. However, the author had conducted extensive archaeological research around Lake Chad in the 1960s and late 1970s, and was known to be returning to conduct further fieldwork in early 1981. The pot, therefore, stood outside the Wedderburns' house, still full of earth and with nobody suspecting that it contained anything else. Some time went by and then the Wedderburn's gardener accidentally knocked the pot over, breaking it. It was subsequently noted that the pot was half full of beads, at which point the pot fragments, beads and earth fill were all swept up to show the author on his next visit.

When inspected in January 1981, it was found that the pot could be completely reconstructed (Pl. VA). It proved to be narrow-necked and round-based, measuring 180 mm in height, 150 mm in greatest diameter and with a neck aperture of only 19 mm. The vessel was undecorated and of a buff-colored fabric with a thin dark-brown slip, much of which had worn off. This pot form is one that appears only late in the local archaeological sequence (Connah 1981); i.e., it belongs to the period from the second half of the first millennium A.D. onwards. The lack of decoration or other distinctive features makes it difficult to date the vessel more precisely.

In addition to the pot and the heap of loose beads was a solid lump of earth which preserved part of the internal curvature of the pot and had numerous beads embedded in it. Careful examination of this lump



**Figure 1.** The location of Ala in relation to other archaeological sites in the Lake Chad region of Nigeria, as known prior to 1981. The 1981 survey revealed a substantial number of additional sites within the survey area (Connah 1984) and subsequent work by others located even more in the region as a whole (e.g., Breunig, Neumann and Van Neer 1996)(drawing: G. Connah).

revealed that the beads had probably been unstrung when put into the pot, and they had occupied the lower half of the vessel. After burial, the upper half of the pot became filled with fine sandy earth that apparently trickled into it over time. Finally, it was noted that the pot had lain in the ground at an angle because the sandy earth in its upper half showed a tilted micro-stratigraphy. The lump of earth was then soaked in water and all the beads contained within it were extracted.

The pot was found to contain 622 stone beads of the following materials: carnelian (562 specimens), quartz (48 specimens) and possible carnelian (12 specimens). The recorded forms are described below. The average measurements provided are approximations only. Furthermore, no weights were recorded because there was no way to accomplish this at the time.

Carnelian; dull red to black; long bicones; 56 specimens.

Average length: 11 mm  
Average diameter: 10 mm

Carnelian; dull red to black; short barrels/short bicones; 21 specimens.

Average length: 9 mm  
Average diameter: 12 mm

Carnelian; dull red to black; short cylinders; 65 specimens.

Average length: 7 mm  
Average diameter: 9 mm

Carnelian; dull red to black; short bicones; 420 specimens.

Average length: 7 mm  
Average diameter: 10 mm

Quartz; white; short barrels/short bicones; 2 specimens.

Average length: 11 mm  
Average diameter: 12 mm

Quartz; white; short cylinders; 11 specimens.

Average length: 7 mm  
Average diameter: 9 mm

Quartz; white; short bicones; 35 specimens.

Average length: 6 mm  
Average diameter: 11 mm

Carnelian(?); dull pink to white; short cylinders; 7 specimens.

Average length: 5 mm  
Average diameter: 9 mm

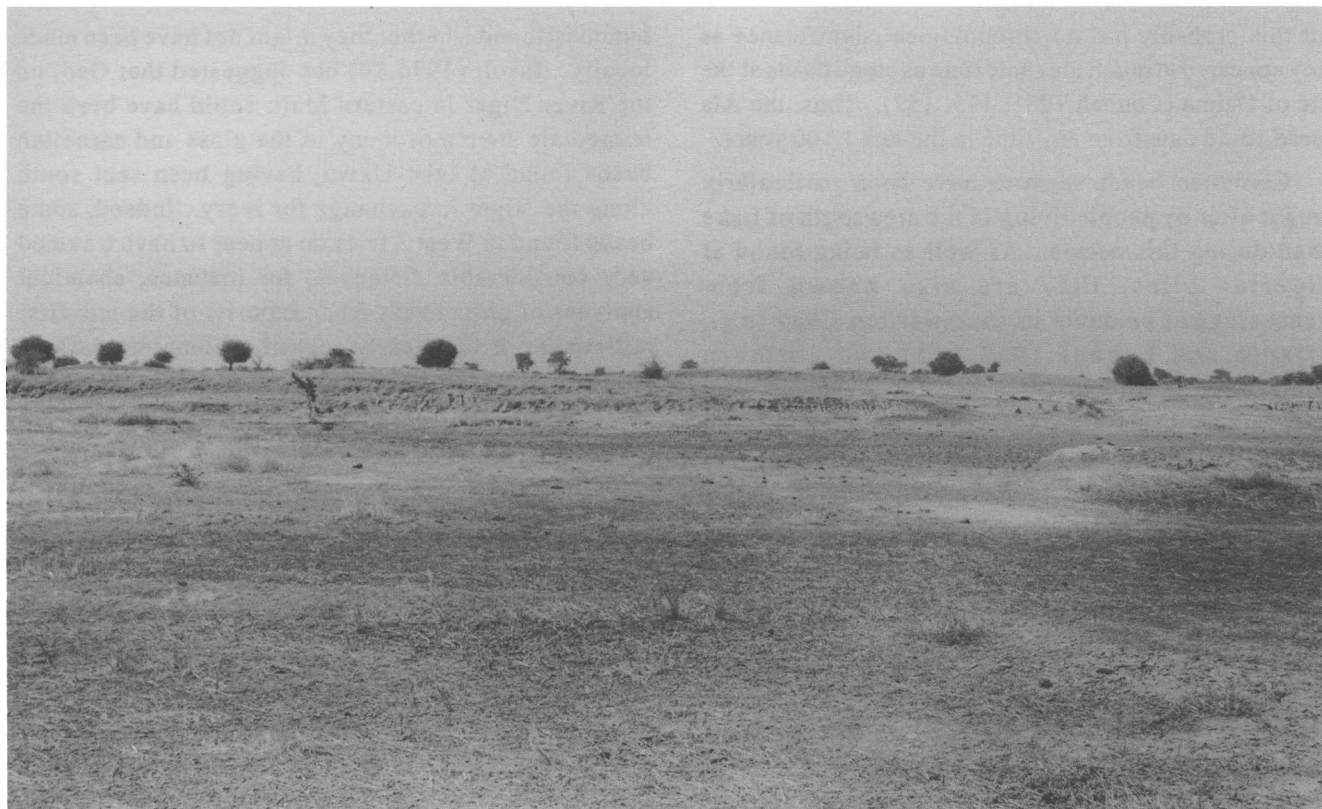
Carnelian(?); dull pink to white; short bicones; 5 specimens.

Average length: 6 mm  
Average diameter: 9 mm

The beads (Pl. VB) were irregularly shaped in many instances and the shapes listed above actually merge into one another, short bicones and short barrels particularly so. Many of the beads, especially the short bicones, were concave or dished at one end. Although not absolutely certain, it appears that the perforation was drilled from one end and the concavity was formed either when the drill broke through the other end or when the workman knocked out whatever material remained in the hole after the drill broke through (cf. Lucas and Harris 1962:44). In the case of the short barrels/short bicones, the concavity had been almost completely removed during the subsequent grinding and polishing of the bead.

## EXAMINATION OF THE HOARD SITE

Soon after the beads were inspected, the author was able to visit the find site in the company of the man who had made the discovery. The general area consisted of a level clay plain with overlying sand in some places. When the visit was made on February 8, 1981, the dry season was well advanced and the only vegetation consisted of a thin thorn scrub (Fig. 2). An extensive area of modern superficial disturbance, probably resulting from the removal of earth during road construction, was found on the west side of the road south of Ala. The east side of this disturbance consisted of a bank about 1.5 m high that ran parallel to the adjacent road embankment. This bank had been gullied by rainfall and it was here that the pot containing the hoard had been found. Inspection of these gullies revealed another pot at a depth of about 0.8 m, but it was empty. It was decorated with mat impressions that are more common early in the Borno pottery sequence (Connah 1981:118; Gronenborn et al. 1996:207), suggesting that the vessel could have been earlier in date than the pot containing the hoard.



**Figure 2.** The Ala site, looking west from the place where the hoard was found, February 8, 1981 (photo: G. Connah).

Other potsherds were thinly scattered through the exposed deposit, as well as over the surface of the extensive area of disturbance. Furthermore, a scatter of natural iron concretions covered this area and samples of these showed a 37.3% content of total iron when analyzed by the Australian Mineral Development Laboratories in Adelaide. The laboratory report commented that the concretions "could not be recommended for traditional African smelting except if there was nothing better in a particular location." In fact, such material was formerly used in this area for smelting iron just because "there was nothing better" on the otherwise stoneless plain south of Lake Chad (Connah 1981:160; Falconer 1911:186). It was also reported that local informants had claimed that one of the biggest slave markets in Borno had formerly been located in the general area. In short, both archaeological evidence and oral tradition indicated that the area had been one of substantial activity in the pre-Colonial past. It was, therefore, given a site number (Borno 124) and recorded as a flat site, there being no trace of either

settlement or midden mounds in the immediate vicinity. Given the minimal surface vegetation in this area for much of the year, it is common to find human skeletal material eroding from archaeological sites, but a careful search around the findspot revealed no such evidence. It seems likely, therefore, that the pot and its beads are indeed a hoard rather than grave goods. Furthermore, evidence from the site of Daima (Connah 1981) suggests that, had the beads been placed with a burial, they would have been strung and worn by the deceased, rather than merely being placed loose in a pot.

### THE SIGNIFICANCE OF THE HOARD

As already indicated, stone beads only really appear for the first time in the Borno sequence in the second half of the first millennium A.D., so although the Ala beads may be older than the pot in which they were buried, they need not necessarily be so. It is interesting that there are no glass beads in the hoard,

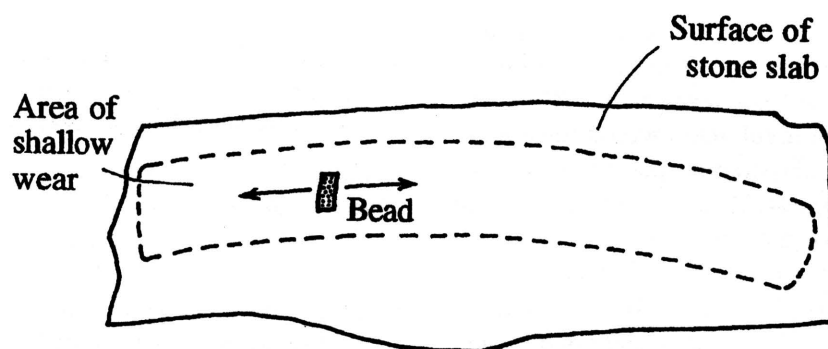


but this probably has no chronological significance as they appeared at much the same time as stone beads at the site of Daima (Connah 1981: 115, 157). Thus, the Ala hoard could date from any time in the last 1,500 years.

Carnelian beads seem to have been particularly sought after by people living in the area south of Lake Chad during this period. As well as being found at Nigerian sites, they are also known from archaeological contexts in southwestern Chad (e.g., Griaule and Lebeuf 1950:145) and northern Cameroon; in the latter area, for example, the 16th-century cemetery of Houlouf contained a large number of examples (Holl 1994:155). However, carnelian beads seem to have had a much wider distribution than this in West Africa, although this has never been studied in any detailed synthesis. When such a study is eventually carried out, it may be found that the distribution of carnelian varies considerably both geographically and chronologically. At the ca. 10th-century site of Igbo-Ukwu in southeastern Nigeria, for instance, there were over 15,000 carnelian beads out of a total of 165,000 specimens, otherwise mostly of glass (Shaw 1970, 1:225, 230). In contrast, excavations in second-millennium deposits at Benin City in southern Nigeria produced only six carnelian examples out of a total of 269 beads (Connah 1975:170), and the site of New Bupe in Ghana, occupied mainly during parts of the first and second millennia A.D., had none at all (York 1973:54).

The question that inevitably arises is "What is the source of the carnelian beads?" Clearly, those from sites south of Lake Chad came from outside the clay plain of that area, but the problem is from where? For a long time it has been customary to assume that such beads came from the Gulf of Cambay in northwestern India (Arkell 1936; Shaw 1970, 1:237-238). However, this has never been demonstrated by comparing chemical or physical characteristics, and Sutton (1991:152) has remarked that the "Indian provenance may have been overplayed through ignorance." Nevertheless, such beads could have been one of the consequences of the expanding Indian Ocean trade of the late first millennium and early second millennium A.D., and might have reached West Africa via Egypt or Nubia. In this connection, it is relevant that Horton (1996:332-333) found numerous carnelian beads in deposits of that period at Shanga on the Kenyan coast,

but questioned whether they might not have been made locally. Insoll (1996:80) has suggested that Gao, on the River Niger in eastern Mali, could have been the immediate source of many of the glass and carnelian beads found at Igbo-Ukwu, having been sent south along the Niger in exchange for ivory. Indeed, some beads found in West Africa do appear to have traveled very considerable distances; for instance, chemical analyses of glass beads from deposits of the late first millennium B.C. to early second millennium A.D. at Jenné-jeno in southern Mali revealed that one bead could have come from India or East or Southeast Asia (McIntosh 1995:252-256). However, in the case of the carnelian beads found at West African sites, an origin outside Africa has often been assumed merely because of an apparent lack of African sources of carnelian (DeCorse 1989:44; Insoll 1996:81), other than in Egypt where it "occurs abundantly" (Lucas and Harris 1962:391). Carnelian is a form of chalcedony and it seems unlikely that it is not present somewhere in West Africa. For instance, chalcedony occurs near the Nigerian rockshelter site of Iwo Eleru where it was used for making artifacts for some thousands of years before the second millennium B.C. (Freeth 1984:138), and it is worth noting Horton's (1996:333) remark that chalcedony "is common in East Africa as well as in India." The quartz beads in the Ala hoard, which have also been found elsewhere, sometimes with carnelian beads, may provide a clue. So far as the Lake Chad area is concerned, Lebeuf (1962:116) attributes such quartz to the northern part of the Cameroon Mountains and thinks that the carnelian possibly came from the same area. Another possibility is a source in southern Niger (de Beauchêne 1970), although this was probably jasper which is known to have been used for beadmaking at Ilorin in Nigeria (Daniel 1937:7). It is also possible that carnelian of Indian origin was being worked or reworked into beads in West Africa itself (Edwardes and Arkell 1937; Insoll 1996:82). The problem is complicated by the way in which the term "carnelian" has sometimes been used, and it seems unlikely that much more will be ascertained about the source or sources of carnelian beads in West Africa until comparative chemical analysis or other studies are carried out. Nevertheless, West Africa does seem to have had its own tradition of manufacturing stone beads; e.g., at Ilorin (Daniel 1937) and at Bida (Edwardes and Arkell 1937) in Nigeria, and on the



**Figure 3.** Stone grinding slab in Zaria, 1967, showing manner of use. Not to scale (drawing: G. Connah).

Kwahu scarp in Ghana (Shaw 1945), and this should make us keep an open mind on the matter. Significantly, when shown photographs of the Ala beads, Peter Francis (1998:pers. comm.) commented: "The carnelians look very African to me, not at all Indian."

### STONE-BEAD CRAFTSMEN OF ZARIA

By chance, the author, guided by Alan Leary, then of the Department of Fine Art at Ahmadu Bello University, Zaria, was fortunate enough to witness what may have been some of Nigeria's last stone-bead workers in action on February 8, 1967 (Connah 1965-1967:76-78). In the old part of the city of Zaria, three men were seated on the ground in the gatehouse of a house, grinding carnelian beads. This was done on thin, oblong slabs of stone which appeared to be schist, and which they said had been brought from the River Niger at Jeba (cf. Daniel 1937:8). The craftsmen pointed out a new slab not yet in use which was leaning against a wall. Each man ground one bead at a time, holding it with his fingers so that it was rubbed at right angles to its long axis (Fig. 3). The grinding was carried out with a long lateral swinging movement of the arm which was held straight with a stiff elbow. Water was used to assist in the process. The carnelian in use was a dull red, not very translucent, and seemed to be poor material. When asked, the men said that it came from India and that they received it already drilled. It was noted that the perforations of the beads that they had with them had been drilled from either end and the two segments often met off line. The beads

were cylindrical, but some others were seen that had square cross sections and were made of better material. Six of the latter were purchased for nine shillings, at that time equivalent to two days' wages for an unskilled laborer. In addition to grinding and presumably polishing the beads, it appeared that the craftsmen performed other work on them as well as each man had a series of thin needle-like tools and small chisels. The former were used to clear out occluded perforations. During this task, the bead was held upright between the big toe and the next toe of one foot which rested on the other in such a way that the base of the bead was supported by the side of the other foot. In one instance, the bead whose perforation was being cleaned in this way broke in half because it was badly flawed. Overall, it appeared that the beads had come from elsewhere, indeed perhaps India, and that they were being altered, or at least finished, to suit the local market. It is quite possible that this was a practice of considerable antiquity.

### CONCLUSION

The hoard of beads from Ala is important because, so far as the literature of West African archaeology is concerned, it is almost unique (Effah-Gyamfi [1985:94] reported the discovery of a hoard of 589 quartz beads at Buoyem near Bono Manso in Ghana, but gave no details). It represents accumulated wealth that its owner hid in a pot and then buried, possibly in or near a settlement. As it was not subsequently recovered, it may be presumed that the owner either forgot its location or died before there was an

opportunity to dig it up. The 622 carnelian and quartz beads are exotic items that were transported into the stoneless Chadian plain from elsewhere. Given the relatively small number involved, it would seem more likely that they were the personal possessions of an individual rather than the stock-in-trade of a merchant and they might, in fact, already have been quite old when they were hidden. Potentially, such a collection should be able to provide valuable information concerning the range and direction of trading contacts in this part of Africa. However, the difficulty of dating such items, other than in general terms, and the problems regarding the origin of the raw materials and the place of manufacture, serve as reminders of how little we know about such stone beads. We desperately need a regional synthesis of these artifacts, including a corpus of firmly dated stratified material recovered from controlled excavations. It is also apparent that chemical analysis and other comparative studies need to be directed particularly at the enigma of carnelian in West Africa. It is high time that we made this beautiful material yield a few of its secrets.

#### ACKNOWLEDGEMENTS

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