MARK HORTON

PRIMITIVE ISLAM AND ARCHITECTURE IN EAST AFRICA

K. A. C. Creswell never visited East Africa; indeed if he had he would have seen very little that would have illuminated his understanding of early Islamic architecture. In the 1930's archaeological investigations had not begun, and most of the monuments were covered by thick and impenetrable bush. But within the last thirty years much has been done to clear the principal monuments and make plans and elevations.[1] Archaeological excavations provide a chronology, extending back into the early Islamic period and detailed evidence for timber as well as stone structures. The result is an important group of buildings that illuminate our understanding of the use of Islamic architecture beyond the centers of scholarship and craftsmanship of the central Islamic lands.

Creswell's comments that "Arabia, at the rise of Islam does not appear to have possessed anything worthy of the name of architecture"[2] is a view that could better apply to East Africa, south of Ethiopia. Indigenous stone structures that are known from the region, such as those from the Zimbabwe plateau and in the highveld of southern Africa, belong generally to the later Iron Age, that is, after A.D. 1000; archaeological investigations have as yet failed to identify an African tradition in substantial timber architecture.

A common view of the genesis of Islamic architecture is that, as it spread into centers of civilization and city life, so it adopted and modified the existing architectural forms of these regions. One exception to this thesis is the coast of East Africa, where there was no such architectural tradition. Therefore one might expect to find traces of "primitive Islam" as defined by Creswell transmitted directly from the Arabian peninsula and unaffected by contact with complex societies. While the phase of primitive Islam may have lasted only a very short time in Arabia, it was able to continue in the more remote areas of the Swahili coast.[3] Thus the possibility of making significant archaeological discoveries is so much the greater there. During excavations at Shanga in the Lamu Archipelago, precisely such remains were discovered, which are of interest to our understanding of the development of Islamic architecture.

THE ORIGINS OF ISLAM AND THE SHANGA EVIDENCE

The early Islamic history of the East African coast is poorly documented. Traditional chronicles and oral history provide a narrative for the arrival of Islam, but these were only written down in the nineteenth century and are generally held to be unreliable.[4] The only eyewitness descriptions by Arabic writers are those of al-Masʿudi and Ibn Battuta. Al-Masʿudi[5] describes a coast largely pagan in 916, with one Muslim royal family residing in Kanbalu. Ibn Battuta[6] describes, from his visit in 1331, a devout and wholly Islamic society, extending from Mogadishu to Kilwa. Other descriptions can be shown to be based on hearsay evidence and often with little basis in fact. Idrisi, for example, does not mention any Muslim communities, but dated Arabic inscriptions survive from some fifty years before he was writing.[7]

The most recent archaeological work undertaken by the British Institute in Eastern Africa has gone some way to establish the chronology of Islam in the region. An eight-year program of excavations at Shanga, in the Lamu archipelago (fig. 1), has been followed by extensive surveys and excavations in Zanzibar and Pemba and a reassessment of previous work at Manda, Mafia, and Kilwa. The broad conclusion from this work is that old ideas of Arab "colonization" of the African coast for the purpose of trade have been largely replaced by a broad process of conversion of indigenous coastal communities to Islam through contact with the monsoon trading system of the western Indian Ocean.[8]

Excavations at the site of Shanga in the Lamu archipelago between 1980 and 1988 revealed a sequence in the center of the site with which we can begin to identify these processes of Islamization. Shanga was a minor Swahili trading center, abandoned in the early fifteenth century, but which enjoyed an early importance, with stratified occupation levels up to five meters in depth, extending back to ca. 750, dated on the basis of imported pottery and radiocarbon dating.

The primary occupation lies directly upon white

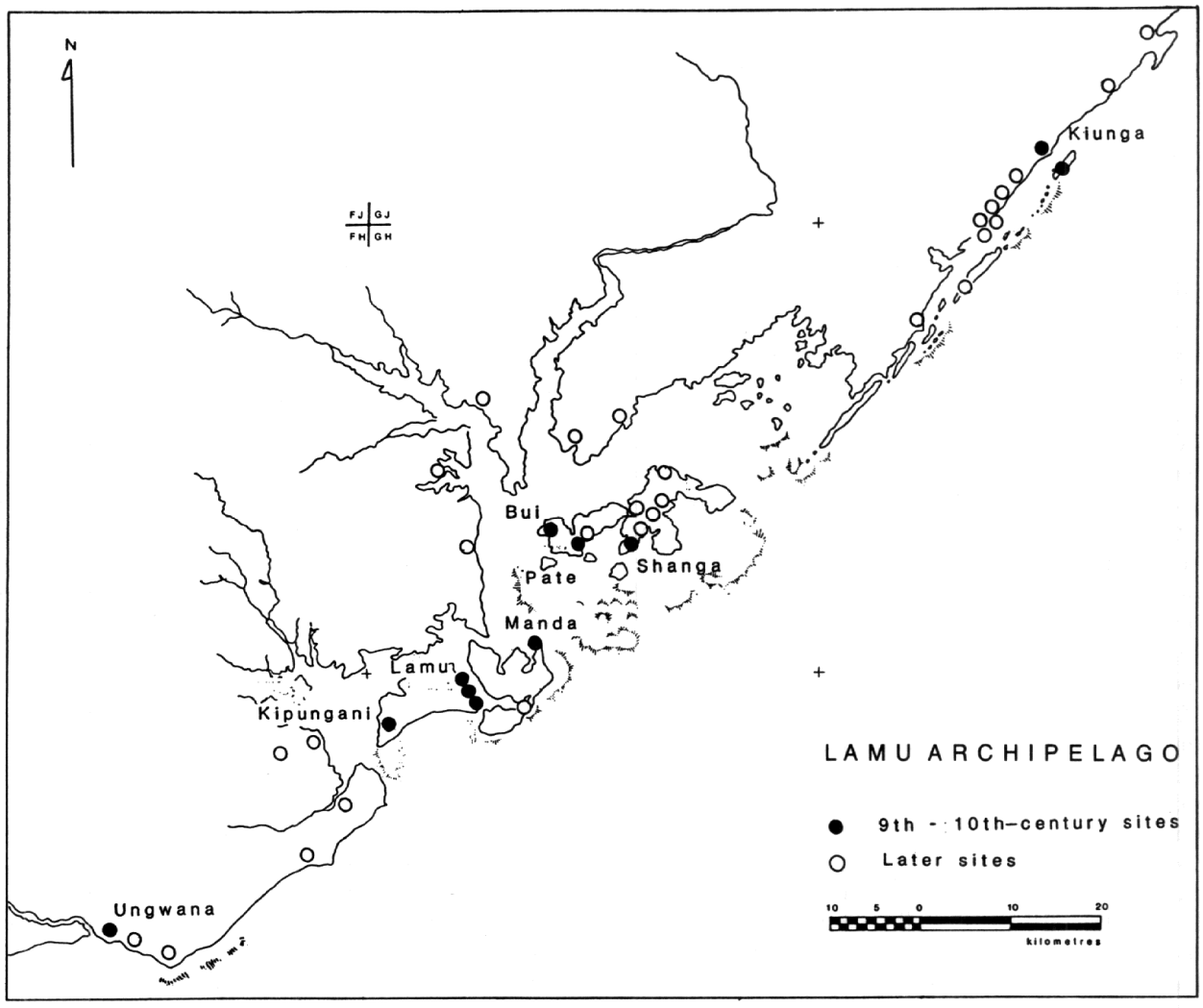

Fig. 1. Location map of early sites in the Lamu archipelago.

beach sand. The pottery assemblage is 96 percent local pottery of the Tana tradition, but there are a few sherds of imported Sasanian Islamic and unglazed storage jars, as well as Chinese stonewares, suggesting that from the outset Shanga was in contact with the monsoon trading systems. The house structures are of timber post-hole construction and circular in plan.

The layout of this early settlement is very characteristic. Excavations revealed a series of shallow gullies cut into the sand, which had been redug on many occasions and which apparently contained a fence. This fence can be shown to have enclosed a rectangular area, approximately 100 meters by 80 meters, with excavated entrances on its west and east sides. The enclosure was precisely cardinal north-south in orientation, and in the geometric center was the well. Later reconstruction of this well damaged its early form, but a concreted surface of sand leading down to the well, formed by the repeated slopping of water onto the surface, indicated that it was either an open hollow or shuttered with timber in a temporary manner. Five meters to the east of the well was a large tree, whose burnt-out tree stump was excavated, and much iron slag was found around it. Elsewhere within the enclosure there was little trace of habitation, only short gullies and slots for temporary structures, often associated with craft activity such as

shell bead manufacture and the preparation of shell cones. Immediately outside the enclosure were found arcs of post holes suggesting round huts, bread ovens, and a much higher proportion of animal and fish bones.

The enclosure appears to represent demarcated areas of specialized activity, with defined entrances whose position is retained throughout the next six hundred years of the settlement. The importance of the well in the center, the large tree nearby with its iron slag, but no furnaces, suggest an area of ritual. The cardinal alignment of the enclosure must also be significant, and astronomical alignments are not unknown among various early pastoral groups in the region.[9]

The ethnographic and ethnohistorical parallels for these ritual enclosures are well recorded in East Africa. The best known are the *kaya* of the Mijikenda who occupy the coastal strip inland from the Swahili.[10] The typical *kaya* is a double rectangular enclosure with massive gates set within the forest. The gates are associated with specific clans, and buried below the gate is a fingo pot, said to contain the magic carried from Shungwaya, the traditional homeland of the Mijikenda. The central ritual area has no domestic occupation, only burials and the *moro*[11] where elders meet. Each *miji* or tribe has its own *kaya* and is modeled on the original archetypal *kaya* of Shungwaya, the homeland, according to tradition. Indeed the Mijikenda and the Swahili speak closely related languages, and the Mijikenda appear to represent the non-Islamicized component of a common society.[12]

The Swahili also built similar enclosures, although within an Islamic context. The plan of Takwa, built in the eighteenth century, clearly shows how the mosque was set within a larger enclosure with entrance gates. In the Comores, where many traditional Swahili practices have continued, a central communal area known as the *fumboni* is found in a number of villages, again with clan and moiety associations with gateways. There are even the remains of a *fumboni* in the center of the Shangani quarter in Zanzibar Old Town. Drawings of nineteenth-century Mogadishu show an open enclosure at the point where the two moieties meet by the mosque of Fakhr al-Din (fig. 2). Fingo pots have also been found under doorways in a number of Swahili settlements.[13]

Of course this East African practice is reminiscent of descriptions of pre-Islamic Mecca, with its walled sanctuary of Kaʿba, containing within it the sacred well of the Zemzem and settlement without. The suggestions of Askumite, and thus African, connections in the architecture of the Kaʿba that were made by Creswell might extend to the form of the sanctuary itself.[14] The east African *kaya* is a local manifestation of a wider settlement plan found within both Bantu-speaking and Cushitic-speaking communities of the region, and may well have extended up to the Red Sea coast of Ethiopia. While no direct link can be postulated, early Muslims that reached the African coast may well have found forms with which they were already familiar in Arabia.

ARRIVAL OF ISLAM

At Shanga, Islamic practice can be identified almost directly above the horizon of white sand with its trodden debris of craft activity. Direct evidence comes from a number of burials cut into the sand and laid out in the conventional way that continues to the present day — that is, lying east-west on the side, with the head inclined northwards to Mecca. They are found in levels dated from around 800.

More controversial are the timber structures that were built directly over the burnt-out tree stump, in the center of the site. They each lie directly below the prayer hall of the later Friday mosque and thus, on the grounds of continuity, would appear to be mosques themselves. Each is laid out, using the *dhira* of 518 mm., and they have a consistent qibla, albeit some 50° away from the true direction of Mecca. What is interesting about this orientation is that it does not follow that of the central enclosure, again suggesting that the timber structures, or mosques, are not primary to it. Support that the deviant qibla line was perceived as the correct line comes from the burials which line up with the timber mosques and not the central enclosure.

A total of seven timber mosques and one stone mosque (figs. 3–5) were found in the excavations below the prayer hall of the Friday mosque which itself was constructed around 1000. The earliest structure lies directly above the burnt-out tree stump and was built onto the horizon of trodden white sand and ironslag. The following is a summary of the sequence:

Mosque A. This structure, rectangular in plan, was marked by traces of a thin wall trench supported by an external row of post holes. The entrance was somewhat eroded, with traces of an emplacement for a timber step. This mosque had two *kinyokae* floors, made of a green organic mud collected from the mangroves, and two phases of a post hole wall, suggesting a rebuilding. It was aligned 310° with internal dimensions of 1.64 m. by 2.59 m. (almost precisely 9 cubits by 5 cubits using 518 mm.).

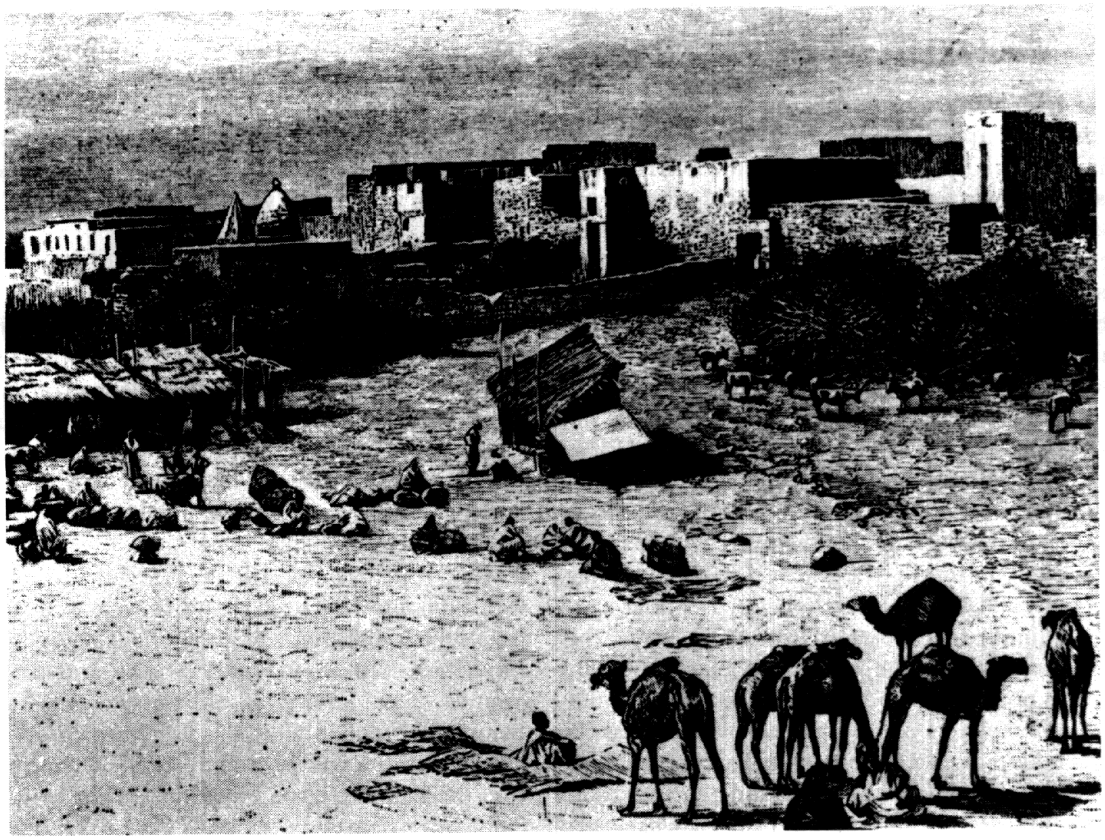

Fig. 2. The central enclosure in Mogadishu, located between the two moieties of Shangani and Hamar Weyne. In the top center can be seen one of the moiety gates into the enclosure. To the left is the 13th-century mosque of Fakhr al-Din. (From G. Révoil, *Voyage chez les Benadirs . . ., 1882.*)

Mosque B. A clearly defined oblong area of well rounded beach pebbles directly overlay mosque A. There were apparently no associated post holes and thus no evidence for a superstructure. Its measurements were very approximately 6.4 m. by 4.0 m.

Mosque C. This was a well-defined rectangular structure, with a wall trench and post-hole rows along its side, a *kinyokae* floor, and a central post hole. This structure was a little larger than mosques A and B and displaced a little to the east, with a very similar qibla of 308°. The internal dimensions of 5.10 m. by 2.85 m. gives a size of 10 by 5.5 cubits using 518 mm.

Mosque D. This structure followed almost exactly the same lines as mosque C, with a qibla of 309°, but again displaced to the east and slightly larger. It had a well-defined *kinyokae* floor and a wall trench, with the post holes actually set into the wall trench, rather than the outside. The plan is also a slight departure; it is a two-celled structure, with offset doorways at the south end, a larger northern room, and a smaller southern room. In the center of the west wall is a pad of *kinyokae*, possibly the base of a stair. The door jambs to the entrance were marked by square holes, suggesting a substantial door frame. Unlike E, this mosque did not have a central post hole. Its internal dimensions were 7.24 m. by 3.61 m. (14 cubits by 8 cubits, using 518 mm.).

Mosque E. This was a rectangular building that was a complete rebuilding of mosque D. The wall trenches were almost exactly coincident, with those of mosque D cut away by the trench for mosque E. There were two phases to this building represented by two floors using *kinyokae*, two cuts for the central post, and a foreshortening by the demolition of the southern room in the second phase. The walls were made up of thin sticks, up to 40 mm. in diameter and then covered in *kinyokae* to pro-

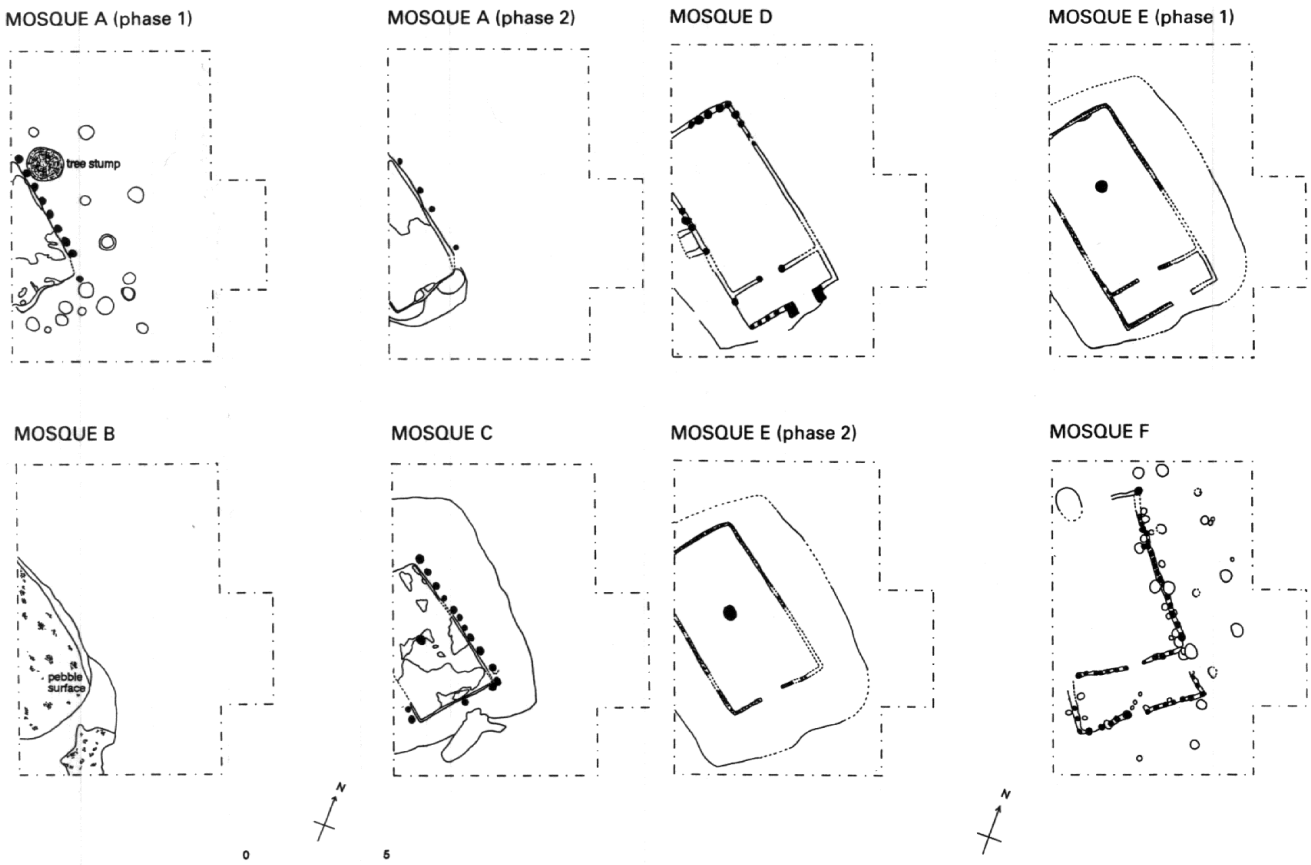

Fig. 3. Plan of the foundations of timber mosques A, B, and C from Shanga. The post holes which have been shown solid provided evidence for the exact position of the timber post, or "ghost."

Fig. 4. Plan of the foundations of timber mosques D, E, and F.

duce an even surface. The central post hole was the only substantial post associated with this building, suggesting that it had a flat, rather than a gabled, roof. The dimensions of this structure were 6.21 m. by 3.61 m. or exactly 12 cubits by 8 cubits, using 518 mm.

Mosque F. This rectangular building was a new structure, on a new qibla line of 323°. It too was divided into a larger northern and a smaller southern room, entered on axis from the south, but with an offset inner doorway. It was constructed with a wall trench that contained posts, as well as an external row of supporting posts. A large post in the center of the north wall might be for a mihrab, as there is no comparable post on the southern wall required for structural support. Only one plaster floor was found, but the pattern of re-cuts of post holes suggests that there were at least two phases of building and replacement. The internal dimensions were 7.25 m. by 4.14 m. (14 cubits by 8 cubits using 518 mm.).

Mosque G. A wooden building was defined by a number of large post pits, 0.80 m. in diameter and up to 1.0 m. deep. As the posts had been robbed out, their exact position could not be discovered. The floor level of this building had also been destroyed. However, the basic plan was of a rectangular building that was undivided internally. Two smaller posts suggested a porch or entrance on the east side. The qibla was 329°, and the approximate external dimensions were 9.7 m. by 5.4 m., that is 18 by 10 cubits, using 540 mm. and not the 518 mm. of the previous structures.

Mosque H. The first stone mosque was built directly over the post holes of mosque G. It was constructed of neatly shaped porites coral (that is, undersea coral quarried by

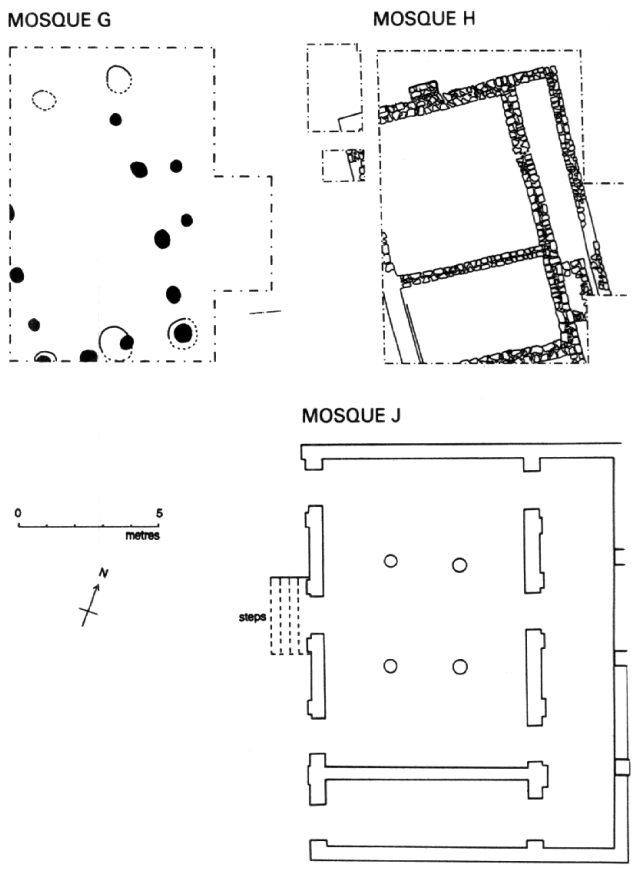

Fig. 5. Plan of the foundations of timber mosque G and of the two stone mosques H (all phases) and mosque J (primary phase).

divers and shaped while still wet), bonded by mud with a white plaster face. In plan, the building was divided into three parts — a square prayer hall, a narrow south room, and a southern courtyard beyond. A western annex was added during the life of the building. In the center of the north wall were the remains of a salient that presumably contained the mihrab. On the west side were steps, probably the base of a staircase minaret. No floors survived, but a layer of white sand sealing the construction level suggested that there was a raised floor, probably capped in plaster. The span of the prayer halls was too wide and must have been supported by a central column, but this too was robbed out. Constructional evidence showed that there were three phases of building. Internal dimensions of 5.10 m. and wall thickness of 0.54 m. show that a cubit of 540 mm. was used, with a qibla of 329°.

Mosque J. Mosque J is the Friday Mosque; it still survives (fig. 6). It was built in stone, which was still in use when the town was abandoned in ca. 1425. The mosque had three plaster floor levels resting upon a platform of white sand, 1.5 m. deep. The mosque was entered by steps in the center of the west side. The east and west walls had an arcade of flat-headed doorways with small rectangular windows above. On the east side, there was a veranda of the same height as the internal floor. The mihrab that was present in the final phase was inserted through the north wall. The earlier arrangement was destroyed, but it was apparently a much smaller niche, possibly set within the thickness of the north wall. The external walls had side pilasters, which were built upwards to support a thatched roof. Internally the prayer hall was divided into a large northern and a small southern room, but this dividing wall was demolished in the second phase and replaced by columns. Many reused stones were included in its walls. The qibla was 342°.

DATING

In the absence of inscriptional evidence, dating is either by radiocarbon or by association with local or imported pottery. The pottery comprises three basic assemblages:

The fill of Mosque J. The floor was built over a platform of white sand, which contained a large number of sherds of pottery, all of which were recovered, through total sieving. Sherds included Sasanian Islamic, white glaze, and luster pottery, the later forms of the earliest local pottery, but not a single sherd of sgraffiato pottery. This group can be closely dated to around 1000, providing a construction date for mosque J.

Construction levels associated with Mosque H and G. These contain fewer sherds, similar to those at Mosque J but with no luster pottery and with white glaze, and earlier forms of local pottery, dating to 850–900.

Levels associated with Mosques A–F. There was very little variation in the content of these layers, and pottery was generally rare. The very earliest types of local pottery were associated with Sasanian Islamic, eggshell wares, unglazed storage jars, and single sherds of Changsha stoneware, Dusun and black stoneware. White glaze was entirely absent. Date range is 750–850.

A sequence of charcoal samples was recovered from the stratified mosques providing direct radiocarbon dates; the dating was undertaken by Dr. R. Switsur of the Godwin Laboratory, Cambridge University. Six

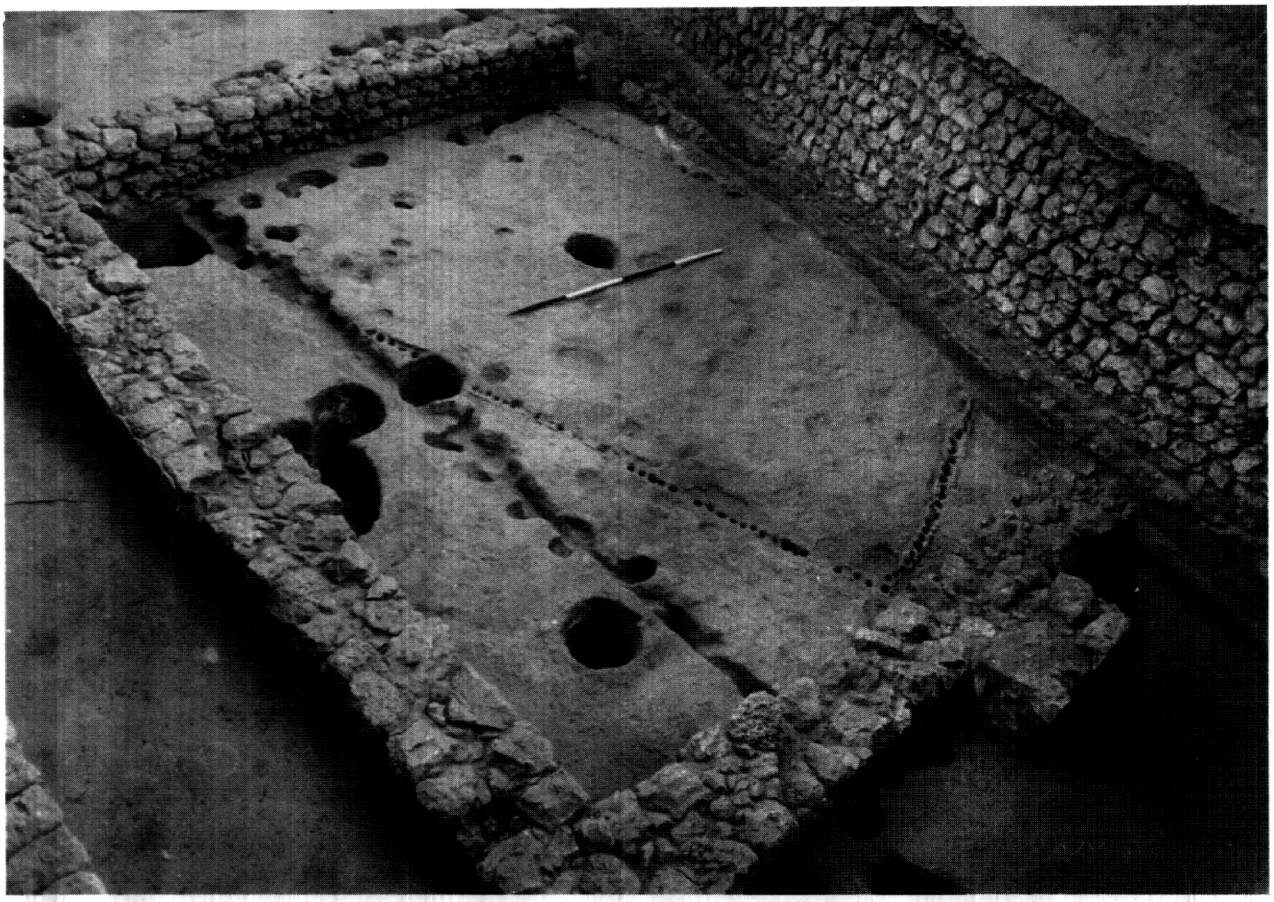

Fig. 6. Excavations within the prayer hall of mosque J, showing the plan of mosque H, and the post holes of mosques E (phase 2) F and G. The three principal qibla lines are visible.

Table 1. Radiocarbon Dates from Shanga Mosques

Sample Reference	Archaeological Context	Estimated Date	Radiocarbon Age BP	Calibrated date range, cal AD 68%	95%
SA1982	Fill of tree stump, cleared to build mosque A	750	1235 ± 35	710 to 745 760 820 835 855	685 to 880
SA1647	Post hole in wall of mosque C	790	1180 ± 40	790 to 890	720 to 735 765 965
SA1512	Central post hole to mosque E, associated with first of three phases	825	1170 ± 45	785 to 895 925 935	720 to 735 765 965
SA0659	Post hole of mosque F	850	1100 ± 50	890 to 980	815 to 840 850 1020
SA0616	Spread associated with early use of mosque H	900	1060 ± 45	900 to 915 950 1020	895 to 1025
SA0590	Spread below floor of mosque J, above robbing of mosque H	1000	985 ± 35	998 to 1042 1095 1115 1105 1150	980 to 1062 1070 1125 1135 1160

samples were chosen to represent the span of the nine mosques excavated. Samples were from securely located features such as post holes or contexts sealed below floor levels. Table 1 shows the results obtained, together with our estimates of the date arrived at through ceramic analysis and general evidence of sequence. The six radiocarbon ages obtained from these samples correspond correctly to their stratigraphic order. The two early radiocarbon dates provide an indication that the first mosque is unlikely to date from the seventh century, even at 95 percent probability levels. The earliest possible date for the tree stump would be 685 and for mosque C 720; at 68 percent these dates are 710 and 785. A date for mosque A would, on calibrated dates, lie within the range 750–850. The archaeological and ceramic evidence would point to the earlier end of this range. A possible dating scheme would be: mosque A to the second half of the eighth century, with decadal rebuildings of the flimsy structures A, B, C, to say ca. 800 and generational rebuilding of the more substantial D, E, F and G to ca. 900; the stone mosque H in use ca. 900–1000, replaced by mosque J ca. 1000.

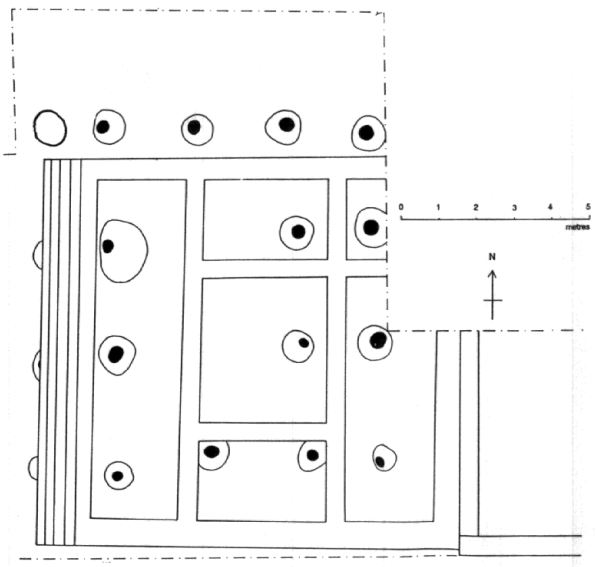

Fig. 7. Plan of the timber hall at Shanga excavated in 1988, with the foundations of the porites building shown above. The precise position of the timber posts (shown as solid) could be defined within the larger post pits.

SECULAR BUILDINGS

Contemporary with and very near to these early timber mosques, on the west side of the well, another timber structure, which could be described as a hall, was found and excavated (fig. 7). The post holes were of two types, an outer row of small posts and an inner grid of massive post pits up to 2 m. in depth and up to 1.6 m. deep. The ghosts of the posts themselves suggested timbers up to 40 cm. in diameter. In plan, the post holes formed a grid, five by four of equally spaced posts, with the exception of two central posts, suggesting the structure had a symmetrical internal courtyard and a portico on each side that ran north-south (fig. 8). The alignment of this structure was that of the central enclosure and not of the mosques to the east. Its scale suggests a ceremonial function, and it was replaced, significantly, by a stone building on the same alignment.

This new building was constructed of porites coral bonded in mud with plaster facing. Its positioning, slightly to one side of the timber hall, shows that the builders were aware of the location of the post pits. Otherwise the two structures were almost identical in size and shape, and the stone building must be viewed as a replacement in stone of the timber hall below. Dating evidence suggests that this took place around 900.

The porites building (fig. 9) was entered from the west by a short flight of steps. On one side of these steps was a basin presumably for washing feet before entering. Inside the plaster floors were raised on a platform of white sand, and as the building was heavily robbed, there was no direct evidence for the positioning of doorways. There were three rows of rooms, the first undivided, possibly an internal courtyard, the second divided into three, and the third into two. At the east end was another, much shorter flight of steps to a rear space. There was no evidence of domestic occupation on the floors, or indeed in the external courtyards. Some meters to the west was a second, much smaller, porites building, of two rooms, again with raised floor levels. These may have been stores.

ARCHITECTURAL ORIGINS

Finding parallels for these buildings is a task beset with difficulty, not least because such ephemeral timber structures have never before been excavated either in East Africa or in Arabia. However some suggestions can be made, although I realize they are based upon very slender evidence.

The timber mosques. The reconstruction of the elevation from the pattern of post holes suggests that the build-

Fig. 8. The timber hall with the principal post pits excavated out.

ings were flat-roofed rather than gabled. It is noteworthy that the side post holes are exactly the same size as the corner posts. Mosques D and E, for example, have no structural supporting timbers on the corner or on the central axis, which initially led me to conclude that they were not roofed at all. The evidence for a central post, however, indicates that some form of roof was placed over the structure, but it is very difficult to see how a gable roof was supported with no major posts at the north and south ends to support the timber. I think, therefore, that the evidence points to flat-roofed structures of very simple construction.

There are parallels for the flat-roofed houses in East Africa, known as "tembes," found in the Masai plains of Tanzania in the area of Lake Manyara.[15] Sometimes they were dug into the ground, but more commonly were simply walls of woven wattle attached to regularly spaced timber uprights, which were forked at the top to support a timber joist that held the flat or wagon-shaped roof of wattle and daub. By having a grid of posts, large areas could be roofed in this way, the maximum span for each wattle being about 1.5 to 2.0 m. Reconstructions of these tembe houses in the Village Museum in Dar es Salaam, provide a post-hole plan very reminiscent of the Shanga structures.

However, such flat-roofed structures are clearly unsuitable for the East African coast, where rainfall is much heavier than in the Masai plains. Flat-roofed stone houses are widespread, but these have guttering and run-off channels, which of course cannot be used with wattle-and-daub roofs. But there is some evidence that even domestic mud houses of the coast were flat-

Fig. 9. The porites building at Shanga during excavation. The floors were raised on a platform of white sand that was often higher than the robbed wall foundations. The steps, with a small basin at the foot, are visible bottom right. The well is located in the top left corner.

roofed during the eighth and ninth centuries. Neville Chittick pointed out that the pattern of burning found on daub fragments from Manda were in keeping with their position on the roof, rather than on the walls.[16] Similar daub has also been found at Shanga. It seems most likely that the flat-roofed building type was introduced from an arid area, either the interior of Africa, or the Arabian peninsula. Clearly the latter is most likely, given the Islamic context for these buildings.

A feature of particular interest in the Shanga mosques is the use of rounded pebbles on the floor of mosque B, a practice followed in the first mosque of Amr in Fustat in 641. It was also adopted at Basra in 665; about that mosque Creswell commented that "when people prayed, their hands became covered with dust, which they used to remove by clapping. This caused Ziyad to say, 'I am afraid that in the course of time the clapping of hands will be taken as part of the religious ceremony'."[17] Now we apparently have archaeological evidence for the deliberate laying of pebbles in early mosques.

The southern rooms present a problem in interpretation. Some of the structures have a southern room; others do not, so it was clearly not essential. The manner in which its doorway was staggered suggests that it was there partly to restrict visibility into the praying area. It has no washing facilities, and the well was located at the northwest corner of the mosque, not close to the entrance. But it still may be that this southern room was used for ablutions, introduced in the time of mosque D.

The absence of a mihrab, or indeed any form of qibla marker, in the center of the north wall indicates that the mihrab was not widespread even by the mid eighth century. In the Shanga sequence, the first mihrab may be

with mosque F, where there appears to be a large axially located post that was not answered by another at the south end. This large post may have been partly hollowed out to provide a shallow recessed niche.

The stone mosques. Turning to the stone architecture, the evidence is much clearer. The earliest stone mosque at Shanga fits closely into a group of small mosques known from Samarra and Siraf,[18] which are also dated to the tenth century. These structures do not contain the courtyards that are characteristic of the congregational mosques of the period, but they have a tripartite division along the qibla axis of the prayer hall, back room, and courtyard, in exactly the same way as at Shanga. They have square prayer halls divided by a transverse arcade. As the floor level does not survive at Shanga (and was probably raised on a platform of sand), the central column does not remain, but was probably present because the roof span is too great to have been unsupported. Another feature at Shanga is the base of a set of steps on the east side, probably for a staircase minaret (fig. 10), again found also in the Siraf and Samarra examples.[19]

Although these parallels between Shanga and the Siraf mosques are quite precise, they should not necessarily imply the direct importation of Sirafi architecture to the East African coast. The earlier timber mosques at Shanga have no courtyard, and the separate southern rooms suggest some local continuity from a wooden to a coral architecture. The use of porites coral, a Red Sea technique, points to Yemeni connections and stone structures with similar plan are known from the Yemen,[20] although more recent in date. Very little is known about the small mosques of the Abbasid and late

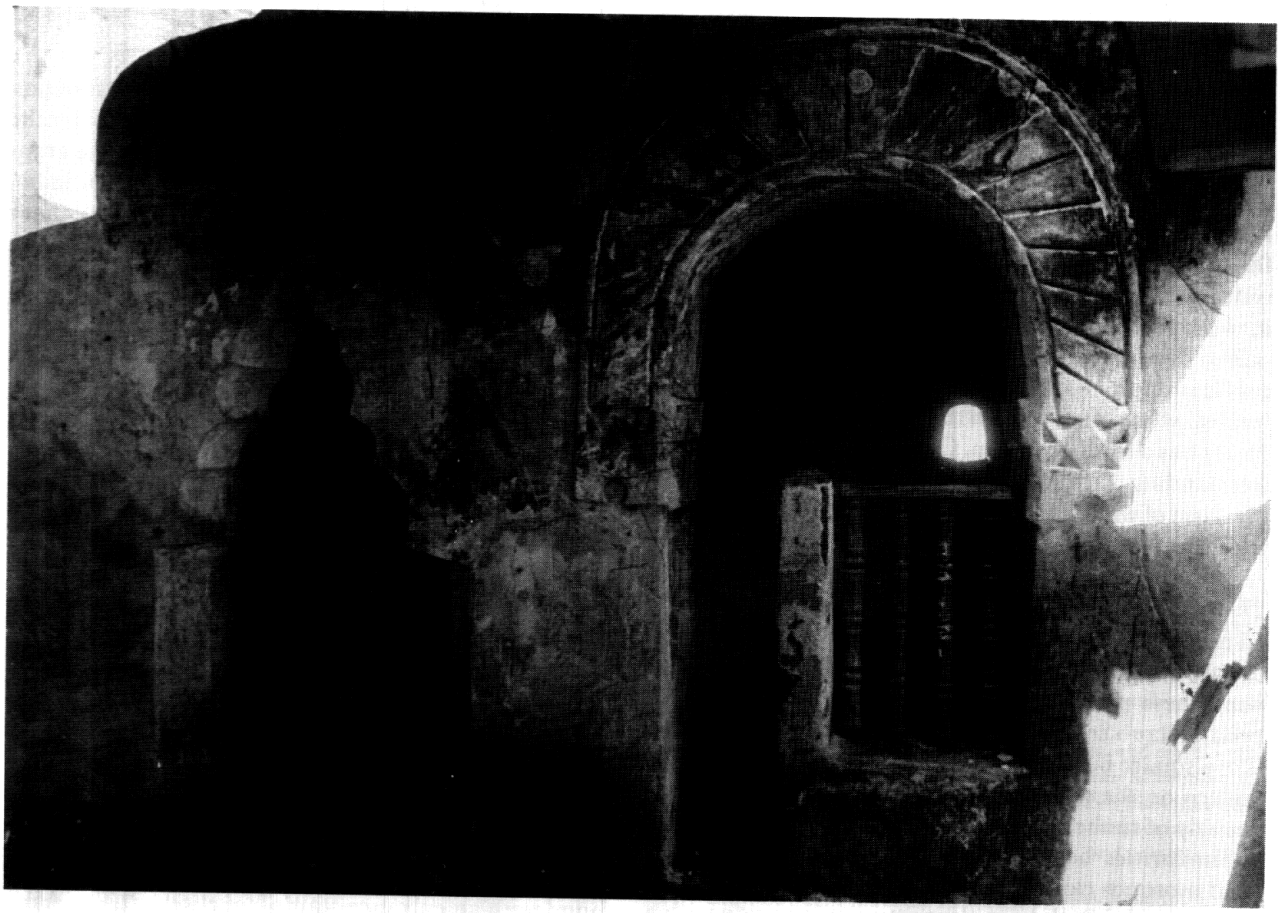

Fig. 10. The recessed minbar at Mbui Maji, Tanzania. It has been claimed that this arrangement of mihrab and minbar is a survival of early Islamic practice in East Africa, but it probably dates to the 18th or early 19th century.

Umayyad period; they may have been of a fairly standard plan throughout the Islamic world as is suggested by the early- to mid-eighth-century mosque at Qasr Muqatil in Iraq.[21]

The final mosque at Shanga, dated around 1000, seems to be a local development derived from its predecessors. The prayer hall is rectangular, in a proportion of 2:3, rather than square; it is divided by two rows of columns. Again there is a southern back room. The floor was raised 1.5 m. above the external ground, so that entry was via steps from a washing courtyard on the west side. Both the east and west walls have an arcade of three flat-topped doors. No trace of the earlier mihrab arrangement survives, although the recess must have been set into the wall above floor level. A particular feature of the mosque was that it has pilaster strips on the outside walls, which end in short pillars that supported a thatched roof, which was presumably gabled. Some of the features of this mosque are reminiscent of the earlier timber and stone structures at Shanga; others, such as the pilasters, are new features.

The stone mosque at Shanga is of particular importance as it provides the prototype for a group of early mosques in East Africa, which are remarkably uniform. This group includes Mbui,[22] Kaole west,[23] Kizimkazi,[24] Kisimani Mafia I, II, and III,[25] and Sanje ya Kati.[26] All these structures date to the eleventh or early twelfth century. They often have side pilasters with prayer halls in a proportion of 3:4. On the east and west walls are paired doors, with a centrally placed southern door; the roof is supported on four, or sometimes two, circular columns, which often were in timber. Only Kisimani Mafia III has a southern room. Otherwise the prayer hall is freestanding with a raised floor level, supported on a platform of white sand. The walls are constructed of porites coral.

The timber hall. The post holes of the timber hall supported major structural timbers, and are too widely spaced to have supported a tembe-style roof. The outer wall beyond these post holes does not survive, but may have been of daub construction. A suggested reconstruction is of a square building, with an internal courtyard and a portico on the west side. The arcade would have been entirely of timber, of which no details have survived.

Similarities between this building and early courtyard mosques can be suggested, albeit on a very much smaller scale. Both have the portico on one side with a central courtyard. Could this structure be a small early courtyard mosque? Evidence for its orientation is against this interpretation. Burials stratified below this structure give a clear indication of the perceived qibla line at this date of around 310°, whereas this structure faces 267°, virtually due west. This is too great a divergence to accept, even in remote East Africa.

The traditional derivation of courtyard mosques from the plan of domestic houses, in particular that of Muhammad, is particularly significant.[27] Reconstruction of the house of the Prophet in Medina gives a rectangular building, with an open courtyard having a southern portico of three bays, similar in some ways to the timber hall at Shanga. The portico was supported on palm trunks, which may well have been the material used at Shanga, as the post diameters are too wide for mangrove poles. Such courtyard houses may have been widespread in the Arabian Peninsula and copied by Muhammad for his own house. A quasi-domestic or ceremonial function for the Shanga building is possible, perhaps associated with the ruling group who adopted this building form from Arabia.

The porites building. The case for a ceremonial function for the timber hall is strengthened when we consider the stone building which replaced it. It survives on a grander scale and represents the adoption of stone building. The technique that uses porites coral appears to have been introduced from elsewhere, and the Red Sea would be the most likely candidate, given the distribution of similar corals in this area and the continued use of porites coral in building to this day.[28]

As the building only survives to floor level, its elevation is difficult to reconstruct. The thickness of the walls, especially the internal walls, and the quantity of rubble suggested that it may not have been a single-storied building; it may have risen to several floors — the entry through a flight of steps suggests a grand front elevation, which would not have fit in easily with a low, squat building. I suggest that this was a tower building several stories in height. Examples of such a building style can be cited on both sides of the Red Sea, from where the use of porites coral seems also to have been derived.[29] The tower palaces of the kings of Askum, which continued to be built at least until the seventh century, provide a particularly close parallel.[30] In Askumite architecture stress was given to monumental stairway entrances, which finds an echo in the Shanga building. At nearby Manda a similar porites building was found with an entrance stair of four steps.[31] The Askumite palaces are not that much larger than the East Africa examples — that at Ta'akha Mariam was only

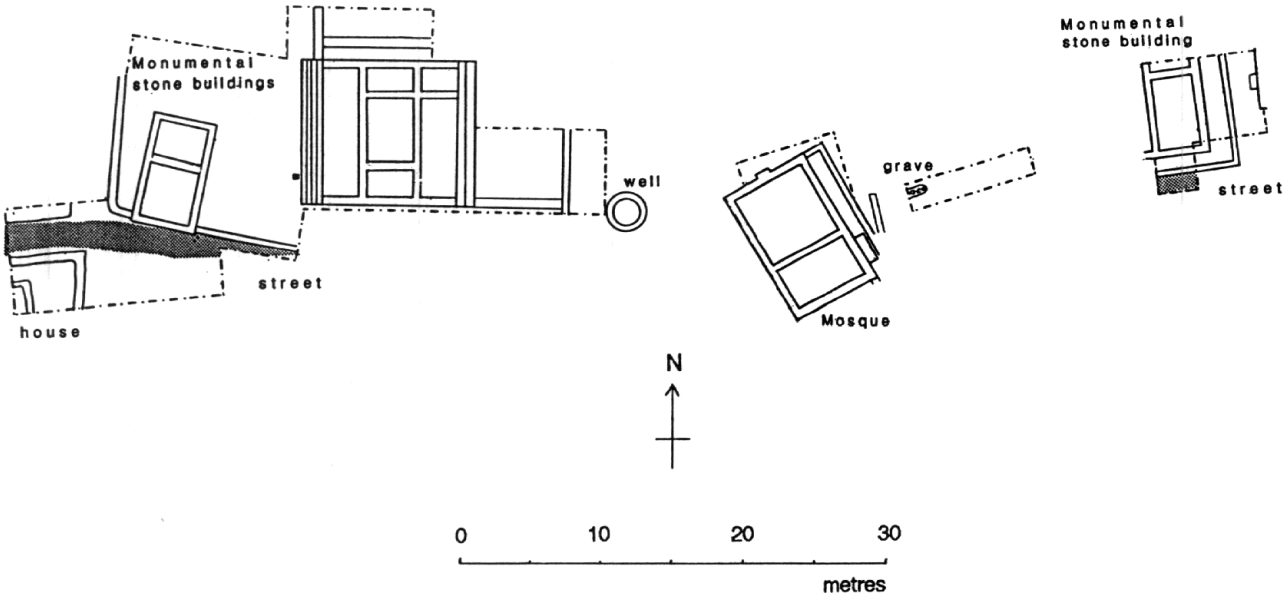

Fig. 11. The complex of monumental buildings in the center of Shanga, around the year 900.

21 m. by 25 m. compared to 12.5 m. by 10.5 m. at Shanga and 16.2 m. by 12.2 m. at Manda.

The opening up of trading connections between East Africa and the Red Sea in the tenth century provides a context for the transmission of this architectural style southwards. The porites building at Shanga is one of a whole group of similar structures that filled the central enclosure; their wooden fences were replaced with stone ones. At the same date the final wooden mosque G was also replaced in stone. The center of Shanga, perhaps covering up to 8,000 m^2 seems to have been filled by a complex of monumental buildings with a modest mosque in the center (fig. 11). Again parallels to Askumite palace complexes can be suggested, such as seventh-century Dongur,[32] where a multiplicity of buildings and courtyards filled an area of 3,000 m^2.

These examples show that East Africa is a fruitful area in which to understand the origins of Islamic architecture, both because the sites are available for excavation, as the earliest centers of occupation are now abandoned, and because in coral and laterite soils, stratigraphy is well preserved, so we are able to document the transition from wood to stone and identify the most ephemeral of buildings. While our dates do not yet extend back into the seventh century, further excavations may push back the origins of sites such as Shanga into the early Umayyad period.

Creswell and others who have followed him have relied upon documentary sources to reconstruct the early forms of Islamic architecture. Perhaps the time has now come for archaeology to be deployed so that we can more critically assess these historical sources.

British Institute in Eastern Africa
London, England

NOTES

1. P. S. Garlake, *The Early Islamic Architecture of the East African Coast*, British Institute in Eastern Africa, Memoir no. 2 (Nairobi, 1966), provides the most comprehensive corpus of plans and elevations.
2. K. A. C. Creswell, *A Short Account of Early Muslim Architecture*, ed. James Allan (London: Scolar Press, 1989), p. 3.
3. Ibn Battuta first uses the term Swahili Coast, and travel writers until the nineteenth century refer to the African Muslim inhabitants as the Swahili. The Swahili Coast extends from Mogadishu in the north to Mozambique, and includes offshore islands such as the Comores, Zanzibar, Pemba, Mafia, and northern Madagascar.
4. Only the fragments of the Kilwa chronicle that survive in a Portuguese précis written down by De Barros (*Da Asia*, Dec. 1, book VII) predate the nineteenth century. On the unreliability of these traditions, particularly the claimed Umayyad expeditions

to the Swahili, see M. Tolmacheva, "They Came from Damascus in Syria," *International Journal of African Historical Studies* 12.2 (1979): 259–69.

5. *Murūj al-Dhahab*, 1: 112; 3: 31.
6. *Les Voyages d'Ibn Batoutah* 2: 179–96. G. S. P. Freeman-Grenville, *The East African Coast, Select Documents* (London: Rex Collins, 1975), contains translations of the main sources that refer to East Africa during the early Islamic period.
7. Idrisi states, in the seventh section of the first clime of the *Kitāb Rujār*, that Barawa (Somalia) was the last of the lands of the infidels, who have no religious creed, but take standing stones and anoint them with fish oil and bow down before them. But in the Friday mosque at Barawa, there is an inscription dated A.H. 498 (1104–5).
8. M. C. Horton, "Early Muslim Trading Settlements on the East African Coast," *Antiquaries Journal* 67, 2 (1987): 290–323; idem, "Asiatic Colonization of the East African Coast: The Manda Evidence" *Journal of the Royal Asiatic Society*, pt. 2 (1986): 201–13.
9. R. Soper, "Archaeo-Astronomical Cushites: Some Comments," *Azania* 17 (1982): 145–62, points out that some of the detailed claims for astronomical observation by Cushitic groups cannot be sustained.
10. A. Werner, "The Bantu Coast Tribes of the East Africa Protectorate," *Journal of the Royal Anthropological Association* 45 (1915): 326–54; T. Spear, *The Kaya Complex* (Nairobi: East African Literature Bureau, 1978); H. Muturo, "An Archaeological Study of the Mijikenda Kaya Settlements on Hinterland Kenya Coast," Ph. D. diss., University of California, Los Angeles, 1987, especially plan on p. 170.
11. Lit. "Cattle byre," a possible clue to the pastoralist origins of the Mijikenda.
12. D. Nurse and T. Spear, *The Swahili* (Philadelphia: University of Pennsylvania Press, 1985).
13. T. Wilson, "Spatial Analysis and Settlement on the East African Coast," *Paideuma* 28 (1982), fig. 2; M. C. Horton, "The Early Settlement of the Northern Swahili Coast," Ph. D. diss., Cambridge University, 1984; C. Révoil, "Voyage chez les Benadirs, les Çomalis et les Bayouns, en 1883," *Le Tour de Monde* 56 (1888): 385–414.
14. Creswell, *Short Account*, p. 3.
15. S. Denyer, *African Traditional Architecture* (London: Heinemann, 1978), pp. 62–63.
16. N. Chittick, *Manda, Excavations at an Island Port on the Kenya Coast*, British Institute in Eastern Africa, Memoir no. 9 (Nairobi, 1984), p. 18.
17. Creswell, *Short Account*, p. 9.
18. Creswell, ibid, p. 414; D. Whitehouse, "The Smaller Mosques at Siraf: A. Footnote," *Iran* 12 (1984): 166–68; and idem, *The Congregational Mosque and Other Mosques of the Ninth to Twelfth Centuries*, The British Institute of Persian Studies, Siraf III (London, n.d.).
19. J. Schacht, "Further Notes on the Staircase Minaret," *Ars Orientalis* 4 (1961): 137–41, argues that the staircase minaret is a relic of early Islamic practice on the East African Coast. Its occurrence at Shanga places its use there as early as the tenth century, but staircase minarets continued to be used in the Gulf for many centuries, as D. Whitehouse shows, "Staircase Minarets on the Persian Gulf," *Iran* 10 (1972): 155–58. Schacht's argument about recessed minbars' being another Umayyad relic survival in East Africa is less convincing, with no known examples predating the late eighteenth century; see J. Schacht, "An Unknown Type of Minbar and Its Historical Significance," *Ars Orientalis* 5,2 (1957): 149–73. Garlake, *Early Islamic Architecture*, pp. 74–75, G. R. Smith, "A Recessed Mimbar in the Mosque at Simambaya," *Azania* 8 (1973): 154–56; and H. N. Chittick, "The Mosque at Mbuamaji and the Nabahani," *Azania* 4 (1969): 59–60, show that Schacht's dates are often too early.
20. R. B. Lewcock, "Architectural Connections between Africa and Parts of the Indian Ocean Littoral," *Art and Archaeology Research Papers* 9 (1976): 15.
21. Creswell, *Short Account* pp. 221–22.
22. Unpublished fieldnotes.
23. Garlake, *Early Islamic Architecture*, fig. 3.
24. Ibid, fig. 50; H. N. Chittick, "Preliminary Report on the Excavations at Kizimkazi Dembani, Zanzibar," *Tanganyika Antiquities Report for 1960* (Dar es Salaam, 1962), pp. 17–19.
25. H. N. Chittick, *Kisimani Mafia: Excavations at an Islamic Settlement on the East African Coast,* Antiquities Division Occasional Paper no. 1 (Dar es Salaam, 1961), and "Report on the Excavations at Kisimani Mafia and Kua." *Tanzania Antiquities Report for 1964* (Dar es Salaam, 1966), pp. 15–16.
26. H. N. Chittick, "Kilwa, A Preliminary Report," *Azania* 1 (1966): 3.
27. Creswell, *Short Account*, p. 4.
28. J. P. Greenlaw, *The Coral Buildings of Suakin* (London: Oriel Press, 1976); S. M. Head, "Corals and Coral Reefs of the Red Sea," in A. J. Edwards and S. M. Head, eds. *Key Environments, Red Sea* (Oxford: Pergamon Press, 1987), pp. 130–33.
29. F. Varanda, *Art of Building in Yemen* (London: Art and Archaeology Research Papers, 1981), pp. 81–99.
30. Y. M. Kobishchanov, *Axum* (University Park, Pa.: Pennsylvania State University Press, 1979), p. 141.
31. Chittick, *Manda*, pp. 41–44.
32. F. Anfray, "L'archéologie d'Axoum en 1972," *Paideuma* 8 (1972): 60–76.