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Spatial distribution and settlement system of the stone structures of south-western Kenya

Isaya O. Onjala

Introduction

During the Later Iron Age period in Kenya, communities that built structures known in the local language as *ohingni* (singular - *ohinga*)¹ occupied the Lake Victoria region in south-western Kenya. The term refers to both stone-built and earth-built settlement enclosures widely distributed in the Nyanza region, that were abandoned before and during the colonial period. Their distribution and contents, in terms of archaeological remains and use of space, indicate that they were the main focus of an extensive settlement system that flourished during the pre-colonial period (Chittick 1965; Lofgren 1967; Odede 1998; Onjala 1990; Wandibba 1986). In this paper, based on fieldwork conducted in the early 1990s, I summarise the basic distribution of the structures within four areas of the Lake Victoria region. I also suggest that particular historical, social and environmental factors contributed to the patterns visible in the archaeological record and that human-environment interactions as well as changing group relationships provide the key to understanding the nature of this particular settlement system.

Environmental background

The south-western Kenya Lake Victoria region is found within the modern districts of Migori and Suba in Nyanza Province (Fig. 1). The modified Equatorial climate of the region is characterized by rainfall and temperature variations of 700 mm to 1500 mm and 14° to 34° C, respectively (Ojany *et al* 1973). Rains fall throughout the year with two peaks during March-May (the 'long rains'), and October-November ('short rains'). Lake Victoria influences both the temperature and rainfall patterns by providing a cooling effect as well as moisture that translates into rain, falling mainly in the evenings. Another influencing factor on the pattern of rainfall is relief. Land varies in altitude from 1163 m at the lakeshore to 2272 m on the inland plateau and hilly areas. Moisture picked up by

¹ Others, such as Wandibba (1986), refer to these structures as *ohingini*; however, the second 'i' is not normally enunciated in the pronunciation of the term in the local Luo dialects, hence the spelling used here.

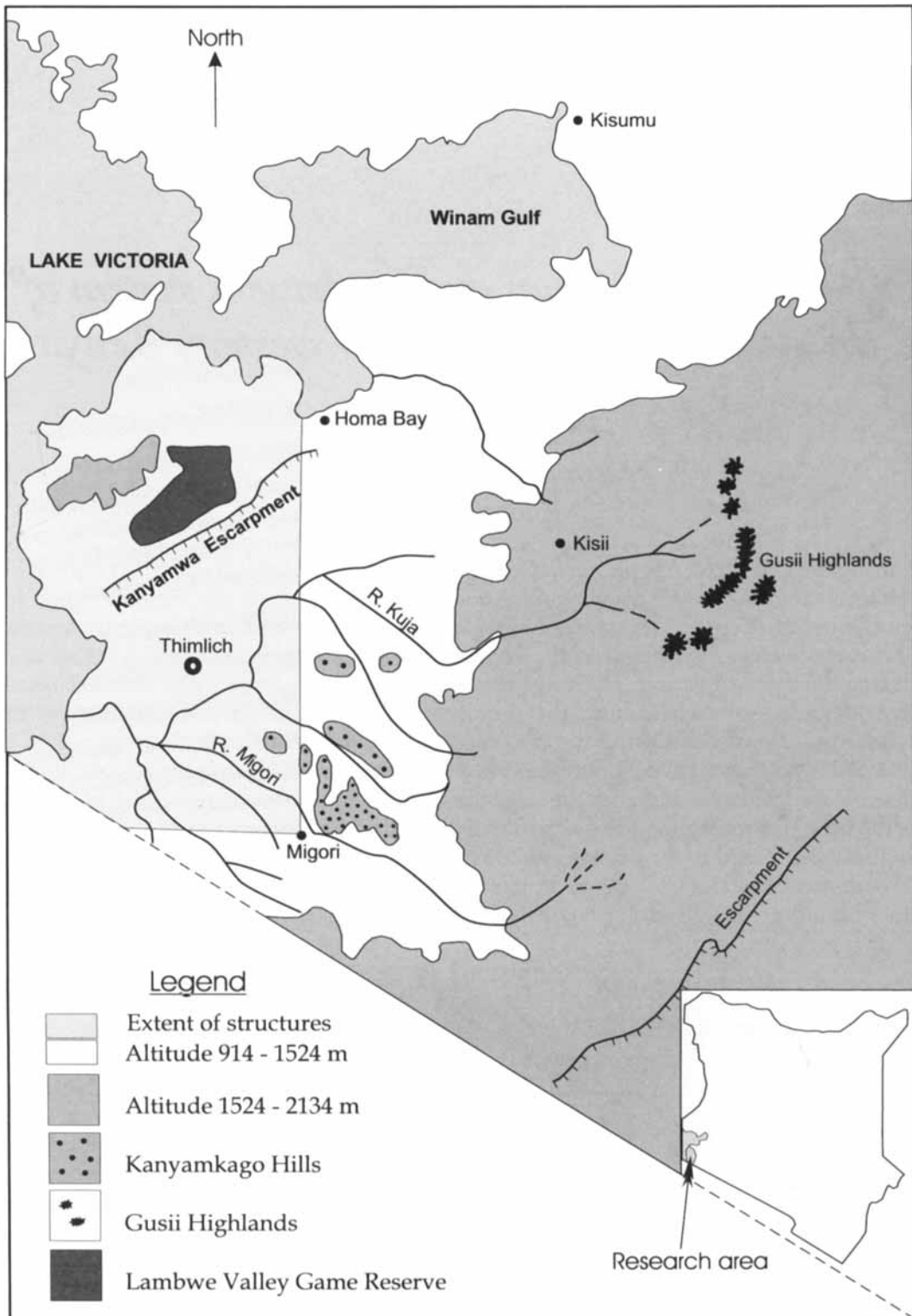


Fig. 1. The research area and the major geographical features

winds passing over the lake rises above the higher regions of the interior and forms convectional rains that fall in these areas, leaving much of the lowland adjacent to the lake with less rain. Human interference has also influenced the region's climate. Past settlement resulted in forest clearance, with farming and iron smelting practices being introduced. These probably affected water catchments and other aspects of the local environment.

Four areas with high concentrations of *ohingni* have been located and mapped. These have been named as Macalder, Homa Bay, Karungu South and Karungu North. Each exhibits distinct physical features. Macalder has a number of rivers and streams, and borders the interior plateau. It therefore has many hilly areas with some, like Nyakune (1402 m a.s.l.), reaching considerable heights. The area receives good rainfall and therefore attracted early settlers to its complex hilly environment. Seasonal streams, swampy areas and scattered hills characterize the area of Homa Bay. Kanyamwa Escarpment runs in a north-east to south-west direction dividing the hilly part that attracted early settlements from the Lambwe Valley, where there were no settlements. Karungu North and South areas, on the other hand, are found close to the lake and generally occupy lowland areas with the exceptions of the high hills of Nyatambe (1313 m) and Tigra (1565 m) and a few other hilly areas that attracted early settlements. In this paper, for the purposes of statistical analysis, these four areas have been designated as sub-regions.

Character and archaeology of *Ohingni*

The term *ohingni* refers to both stone-built and earth-built settlement enclosures found within the Lake Victoria region. In the northern part of Nyanza Province the earth-built settlement enclosures are also referred to as *gunda buche* (Ogot 1967), as they contain additional architectural detail consisting of a ditch along the circumference of the bank. Such ditches may have been a necessary defensive measure, but as critically also served as the main source of murrum used to make the enclosure bank. Only three sites containing earth-built structures are known from southern Nyanza, and none of these have ditches. In this analysis, they have been grouped together with the stone-built enclosures as their number is insignificant in statistical terms.

In this paper, 'a structure' is defined as an earth-built or stone-built enclosure with one or more entrances and interior enclosures that form areas where particular groups of people, whether single or multiple families, resided. In areas where many groups lived together, structures were built close to one another and at times extended from the already existing ones, therefore creating shared walls. In such cases, however, distinct residential units were still maintained, which used separate entrances and smaller interior enclosures. In areas where structures are in close proximity and even share walls, as is the case at the site of Thimlich Ohinga (Fig. 2), this distinction makes it possible to identify and treat structures as individual entities. On this basis, structures on the various sites have been designated as either simple or complex. 'Simple structures' consist of single enclosures at single-structure sites and also at multiple-structure sites where they occur as separate entities having no direct physical link with other structures. 'Complex structures', on the other hand, consist of structures with extensions and connecting features such as gates and corridors as well as shared walls. These are limited to a few areas. In such cases, their details have been treated as components of single, larger entities.

The stone-wall enclosures make up about 99.8% of the structures in the region.

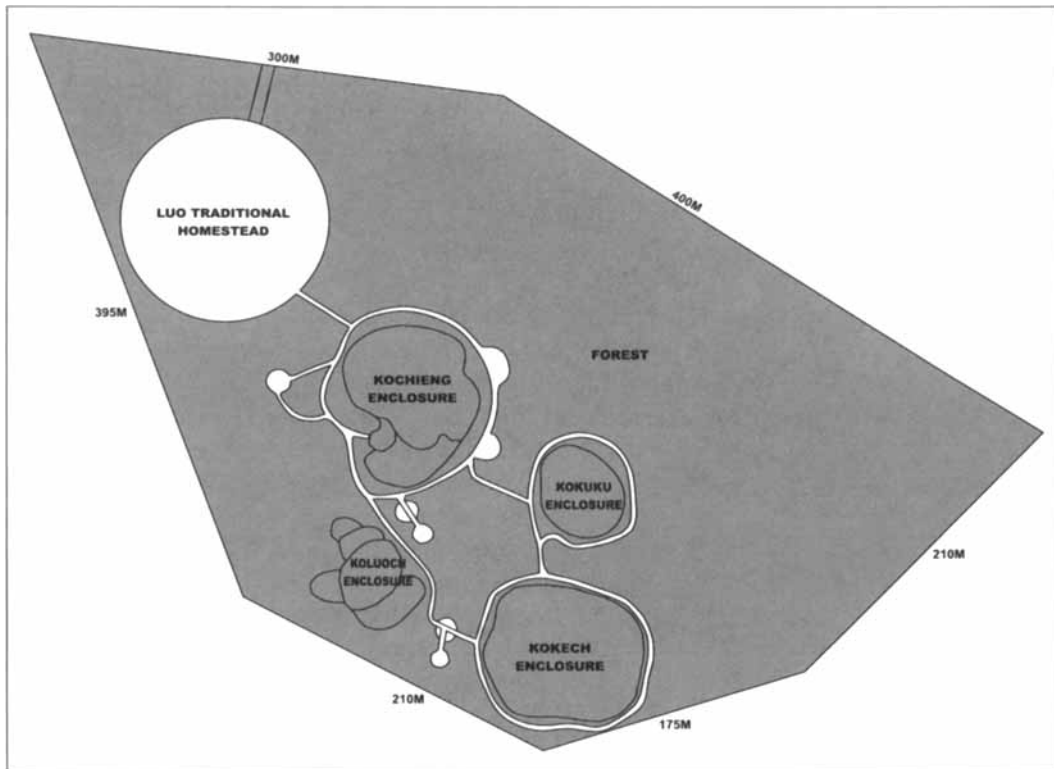
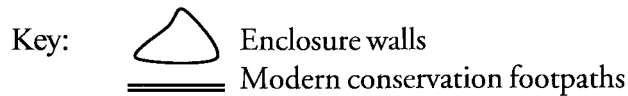


Fig. 2. Layout of Thimlich site showing the distribution of structures



These have walls that consist of neatly arranged stones of all shapes and sizes. Each wall consists of three components (Fig. 3). The outer and inner parts of the walls are comprised of medium-sized blocks of uncoursed random rubble, with an infill of smaller stones. Walls range in height from 1.5 m to 4.2 m, with an average thickness of about one metre. The thickness of the walls tends to increase near entrances to about two to three metres. This was probably employed to stabilise the walls and maximise their strength at entrance points, which were constant in use.

Each structure has one or more entrances, which are typically located on the downslope sides. These measure 1 x 1.5 m and have large, naturally shaped rectangular lintels (Fig. 4). These were securely anchored to the walls so as to bear the weight of the walling above. Along the passage walls of the entrances there is normally a pair of niches, which were probably used to secure some form of gate or wooden cross-bar for closing the entrance. Most structures also contain inner enclosures that have been designated as livestock kraals (Fig. 5), and other surface features including house depressions, and surface scatters of ceramics, grinding stones, stone pestles and faunal remains (Onjala 1990). Traces of iron slag and smelting furnaces also occur. With the exception of the site of Thimlich Ohinga, none of the other sites have been test-excavated (see below).



Fig. 3. Nature and extent of the walls at Thimlich Ohinga. Note the thickness of the wall at the entrance and the tripartite system of wall construction.



Fig. 4. An example of entrances to the Ohingni showing selected rocks of almost uniform shape.



Fig. 5. Examples of interior enclosures at Thimlich

The physical conditions of the structures vary considerably. Preservation is very good at some sites, while at others structures have been greatly reduced or destroyed through a variety of naturally- and humanly-induced processes. Because these factors affected the *ohingni* differently, it is not possible to establish a chronology based on wall conditions. Dating of the structures therefore depends on conventional archaeological methods and oral tradition. Based on oral tradition (Ayot 1979), dates of 1596 to 1920 AD have been suggested as being the era during which these structures were first constructed and eventually abandoned. These need to be confirmed using chronometric dating of the structures. Wandibba (1986) carried out the first radiocarbon dating of charcoal samples from Thimlich and obtained dates of 110 ± 80 and 200 ± 80 BP which, when calibrated, give a long possible range of c. 1650 to 1900 AD. These dates need not be representative of the entire region, since it is believed the interior around Thimlich was settled by Luo significantly later than areas closer to the lake (Butterman 1979). To date the beginning of the tradition, therefore, samples must be collected from across the entire region within which the structures are distributed and from a range of sites.

Survey

To map and document the *ohingni* in the entire study region, a survey was undertaken employing conventional foot survey, interviews and the examination of relevant cartographic and photographic sources. The use of bicycles to reach sites made it possible to cover all areas including those where there were no motorable tracks. Information on where to look for structures was obtained from the local people, including Mr. R.O. Odero, the caretaker of Thimlich Prehistoric Site, who was my field assistant. Sites that

had been destroyed since their abandonment were also identified from aerial photographs and the 1:50,000 topographical maps of the region. In all, 39 aerial photographs were examined in successive stereo pairs. By the end of the field survey and aerial photograph examination, a total of 138 localities had been identified and designated as sites. These contained a total of 521 structures of which 49, or 9.8%, were located through the analysis of aerial photographs.² The accumulated data on site distributions allowed the definition of four sub-regions — Macalder, Homa Bay, Karungu North and Karungu South. While the boundaries of each of these sub-regions were defined arbitrarily, they nevertheless correspond with those areas where enclosures are especially abundant. Other parts of the study area, such as around Gwasi, also contain structures but in far lower densities. These areas are not shown on the following distribution maps (Figs. 6-9) Having documented the location of different structures, their spatial distribution was then analysed using a combination of nearest-neighbour analysis and cluster analysis.

Spatial analysis

Ohingni are located on hill spurs, gently sloping hills and raised ground in the area extending from Mohuru in the south to the Sindo-Mbita area in the north, and from the lakeshore region in the west to a line joining Homa Bay and Migori towns in the east. Four areas (Figs. 6-9) show distinct concentrations. These have been designated sub-regions and form the unit areas for the statistical analysis in this work. As stated earlier, the boundaries were arbitrarily set but the locations are based on the presence of large numbers of structures.

Nearest-neighbour analysis (NNA) was employed first, so as to determine the tendency of the observed point distribution. This technique, borrowed from ecologists and human geographers (Clark *et al* 1954; Plog 1976), determines the overall tendency of points in a distribution. It describes a scatter of points as being either random or non-random. If non-random, then it measures the degree and direction of non-randomness, which is expressed in terms of a coefficient (R). Where the R-coefficient figure ranges from 0.00 to 1.00, then the distribution is said to show a tendency towards a clustered pattern, whereas if the range is between 1.00 to 2.15, this shows a tendency towards regular patterns. If the R-coefficient is 1.00, then the distribution is considered random.

To maximize the results from using this method, I made three assumptions. First, I assumed that there was 100% recovery and mapping of structures in the areas in which the technique was applied, in this case, the four sub-regions. I am confident that this is a valid assumption, given the intensive and extensive nature of the search for structures using the procedures described above. Second, I assumed that all the sites used in the analysis were contemporaneous. Since the structures fall within a period of about 300 years, archaeologically speaking they can all be considered contemporaneous since radiocarbon dating would most likely put them within the same time period. Third, I assumed that the structures represent a single construction sequence, partly because of their distribution and also because of their architectural similarity to one another. Having made these assumptions, the nearest-neighbour coefficient (R) for each sub-region was calculated using the formula:

² All of these had been destroyed since the aerial photographs were taken and no longer survived as field monuments.

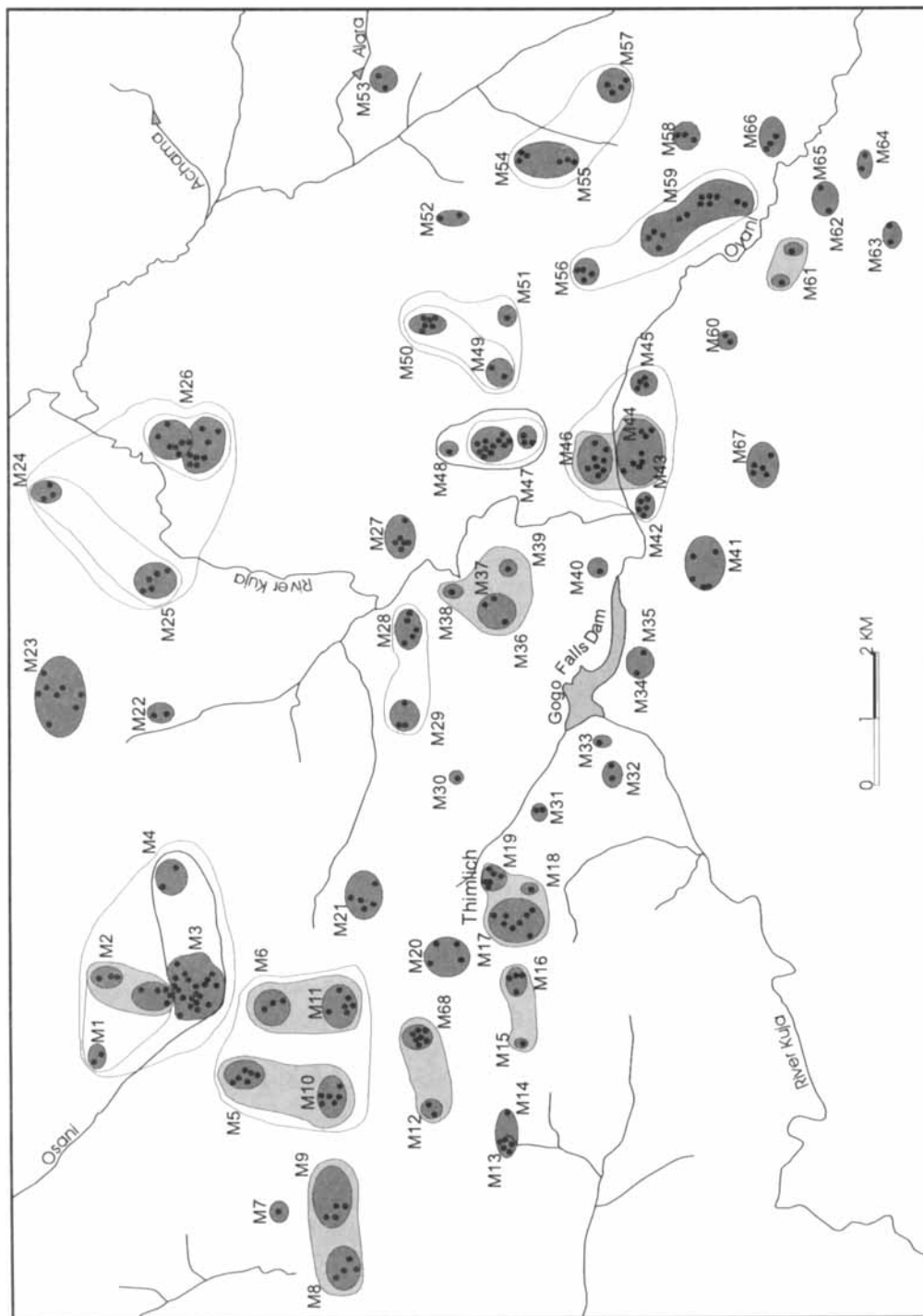


Fig. 6. Distribution of structures and cluster areas (shading) in the Macalder subregion. [For Key: see figure 7]

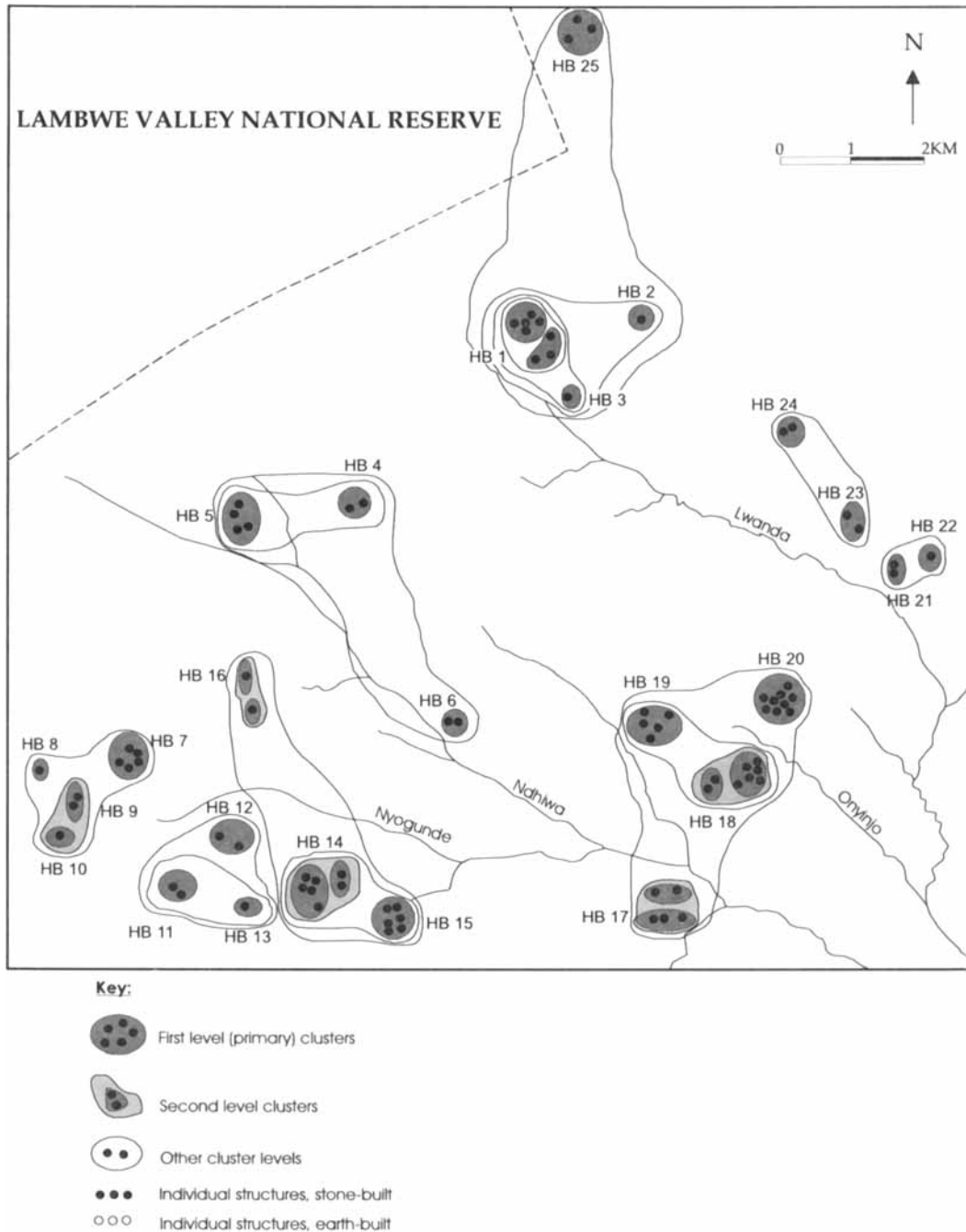


Fig. 7. Distribution of structures and cluster areas in the Homa Bay subregion†

† The maps represent arbitrary units of analysis. They were prepared by tracing the plotted sites and structures from 1:50,000 topographical maps. The traced portions containing the distributions were then used for both nearest neighbour and cluster analyses. The scale used is that from the topographical maps of Macalder (Macalder sheet 129/4), Homa Bay (Homa Bay sheet 129/2) and Karungu (Karungu sheet 129/3 for both Karungu North and South). These were used together with aerial photographs in the mapping procedure.

$$R = r_o / r_e$$

Where, r_o = the mean nearest-neighbour distance, calculated by adding the distances between points and dividing by the number of points in an area. This gives the observed mean nearest-neighbour distance.

And r_e = the expected mean nearest-neighbour distance if the points are randomly distributed. This is calculated using the formula:

$$r_e = \frac{1}{2}\sqrt{p}$$

Where p is the point density in the area being examined for a randomly distributed population.

To identify specific clusters, cluster analysis (CA) was run using coordinates of the plotted structures. This is a spatial statistic which operates on the premise that membership for individual clusters is not known and that even the number of groups is unknown. Its main goal, therefore, is to identify the groups (clusters) and also assign each case to the group to which it belongs. It also allows for the determination of the characteristics

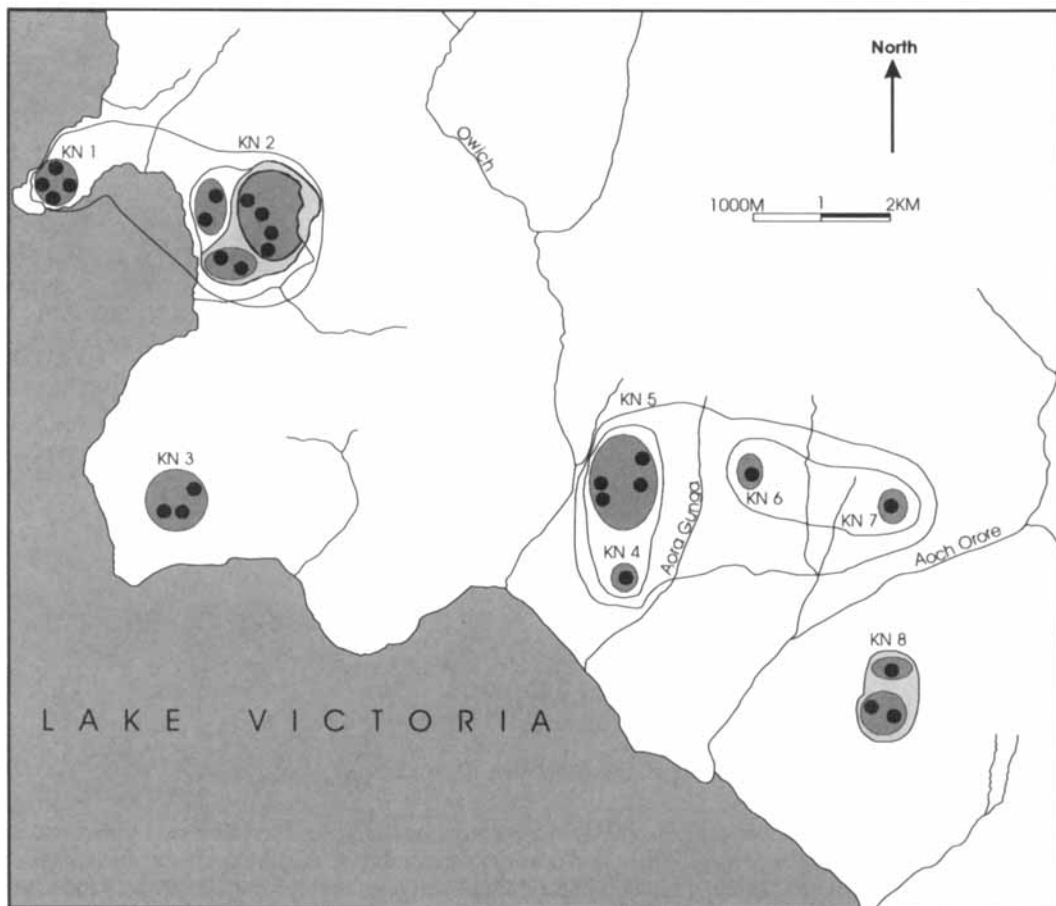


Fig. 8. Distribution of structures and cluster areas in the Karungu north subregion. [Key: Same as in figure 7]

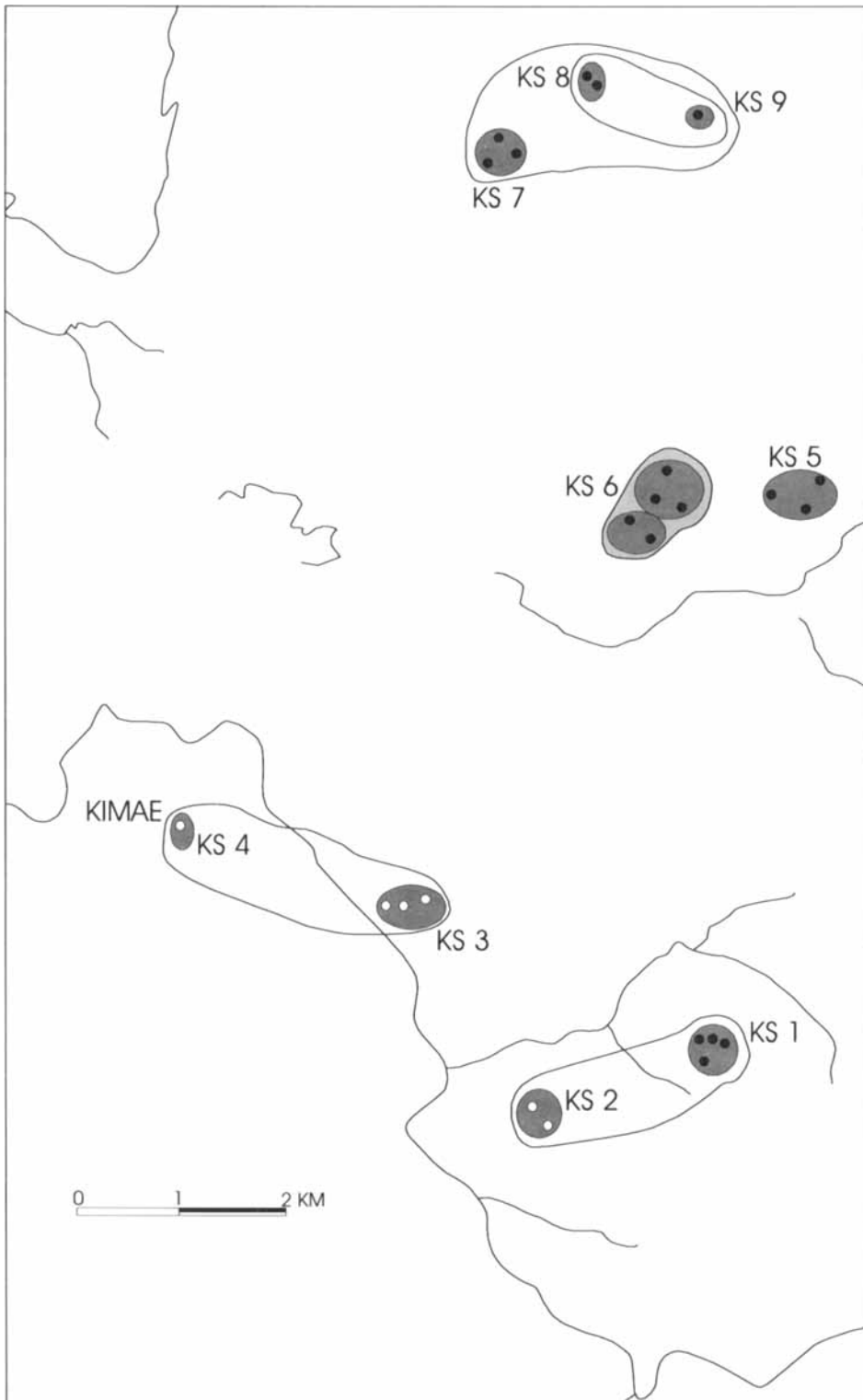


Fig. 9. Distribution of structures and cluster areas in the Karungu south subregion. [Key: Same as in figure 7]

which the objects in question share, as well as those in which they differ. The analysis, using the 'agglomerative complete linkage' method was carried out to overcome the limitation of the nearest neighbour analysis, which gives only the pattern of distribution without offering any explanations or clue as to which and what types of clusters are present. CA provides such clues by, for example, making use of distance measures between structures and for each structure so as to identify clusters in a distribution. Distance therefore explains the clusters, as in this technique closely placed populations are clustered together.

Results

The distribution pattern resulting from the nearest-neighbour analysis in the four sub-regions is shown in Table 1. The pattern is also reflected in the distribution maps shown in Figures 6 to 9.³ These show a tendency for structures to cluster in fairly tight groups. The clusters also tend to centre on sites having two or more structures. The R-coefficients of 0.36, 0.30, 0.40 and 0.33 indicate this strong clustered pattern of distribution. This may be an indication that the communities occupying the sites practiced a communal settlement strategy where related people settled within a single locality or within areas separated only by short distances. Such a settlement strategy would have led to sites having many structures clustered within a limited geographical area. However, even though the R-coefficients show a strong clustering trend, the densities (P) and the expected mean distances are low for these regions. This might have been caused by the inclusion of open areas without structures.

Table 1: Nearest-neighbour coefficients for the sub-regions

| Sub-regions | Area in km ² | Density of points (P) | <i>r_o</i> Value | <i>r_e</i> Value | Nearest-neighbour coefficient |
|---------------|-------------------------|-----------------------|----------------------------|----------------------------|-------------------------------|
| Macalder | 296.8 | 0.86 | 0.20 | 0.54 | 0.36 |
| Homa Bay | 167.8 | 0.47 | 0.22 | 0.74 | 0.30 |
| Karungu North | 61.7 | 0.37 | 0.33 | 0.82 | 0.40 |
| Karungu South | 116.0 | 0.20 | 0.37 | 1.12 | 0.33 |

Table 2 and the dendrograms (Figs. 10-13) also reveal a clustered pattern for the sub-regions. Macalder sub-region contains 64 primary clusters derived from a total of 69 'sites' with a total of 258 'structures', with an average of four structures per cluster. In the

³ The maps represent arbitrary units of analysis. They were prepared by tracing the plotted sites and structures from 1:50,000 topographical maps, as follows: Macalder (Macalder sheet 129/4), Homa Bay (Homa Bay sheet 129/2) and Karungu (Karungu sheet 129/3 for both Karungu North and South). The traced portions containing the distributions were then used for both nearest-neighbour and cluster analyses.

Table 2: Relationship between the distribution of primary clusters and number of structures at a site for the different sub-regions and other areas

| Number of Structures | Number of primary Clusters | | | | | Total | % |
|------------------------|----------------------------|----------|---------------|---------------|--------|-------|------|
| | Macalder | Homa Bay | Karungu North | Karungu South | Others | | |
| 1 | 11 | 8 | 4 | 2 | 6 | 31 | 22.0 |
| 2 | 14 | 10 | 3 | 2 | 2 | 31 | 22.0 |
| 3 | 7 | 2 | 1 | 3 | 3 | 16 | 11.3 |
| 4 | 8 | 3 | 3 | 1 | 3 | 18 | 12.8 |
| 5 | 8 | 5 | 0 | 1 | 5 | 19 | 13.5 |
| 6 | 9 | 0 | 0 | 0 | 2 | 11 | 7.8 |
| 7 | 1 | 0 | 0 | 0 | 1 | 2 | 1.4 |
| 8 | 3 | 0 | 0 | 0 | 2 | 5 | 3.5 |
| 9 | 0 | 1 | 0 | 0 | 1 | 2 | 2.2 |
| 10 | 0 | 0 | 0 | 0 | 1 | 1 | 0.7 |
| 11 | 1 | 0 | 0 | 0 | 0 | 1 | 0.7 |
| 12 | 1 | 0 | 0 | 0 | 0 | 1 | 0.7 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| 15 | 0 | 0 | 0 | 0 | 1 | 1 | 0.7 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| 18 | 1 | 0 | 0 | 0 | 0 | 1 | 0.7 |
| Total No of sites | 64 | 29 | 11 | 9 | 27 | 140 | 100 |
| Total No of Structures | 258 | 80 | 25 | 24 | 134 | 521 | |
| Averages per site | 4 | 3 | 2 | 3 | 5 | | |

Homa Bay sub-region, 29 primary clusters correspond to the initial 29 'sites'. This reflects a tendency towards localised group settlements. The Karungu North and South sub-regions, on the other hand, show distinct settlement preferences with concentrations in two areas, probably as a result of the restricted distribution here of suitable surface supplies of building stone.

There is a significant difference in the densities between the four sub-regions. This can be seen from the distribution maps (Figs. 6-9) where the Macalder sub-region seems to have a higher density than the other three sub-regions. Distribution here covers almost the entire region with sites being larger, mainly multiple-structure sites, reflecting group settlements. This gives a high clustering pattern reflected in the R-coefficient for the area. The high density of settlement in Macalder may also be attributable to better soils and the many gently sloping hills that attracted early settlers. Streams and valleys separate such hills and the settlers probably found these environments attractive for their social

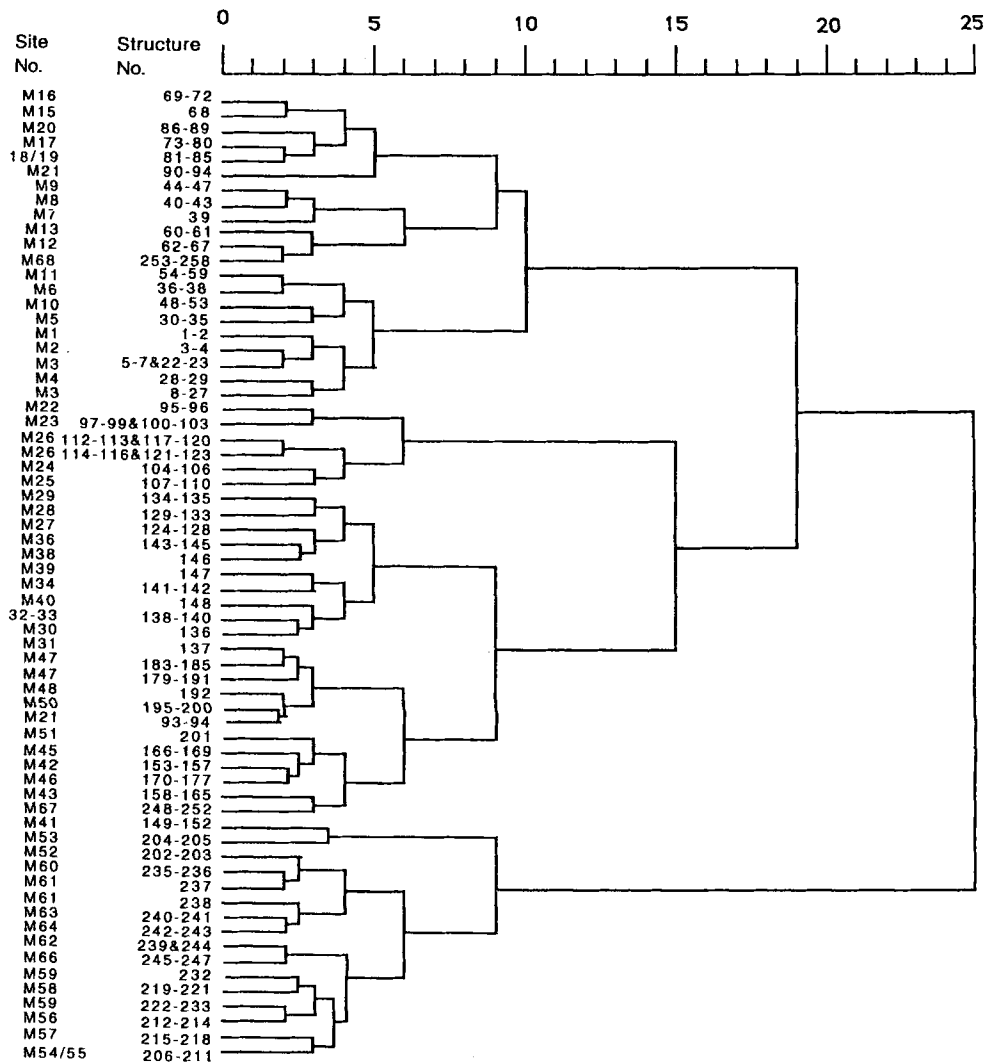


Fig. 10. Dendrogram for the Macalder subregion clusters

and economic needs. Such favourable environments were lacking in other areas. Disease-breeding swamps, for example, limited settlement within the Homa Bay sub-region to a few hilly areas, dry spots, fertile river valleys and headlands.

Settlements in Karungu North and South reflect a dependence on lake resources. Structures correlate with areas where rocks were available for construction and where lake resources, mainly fish that might have been traded with the occupants of other settlements in the interior, could be exploited. Accessibility to fishing points and materials for construction, therefore, controlled the location and density of the structures. In the Karungu South sub-region, agricultural land also seems to have controlled the distribution of settlements.

The R-coefficients and the results of the cluster analysis reveal a clustered pattern of distribution for the south-western Kenya lake region. As has been discussed above, this was caused by both socio-economic and environmental factors. The clusters, however,

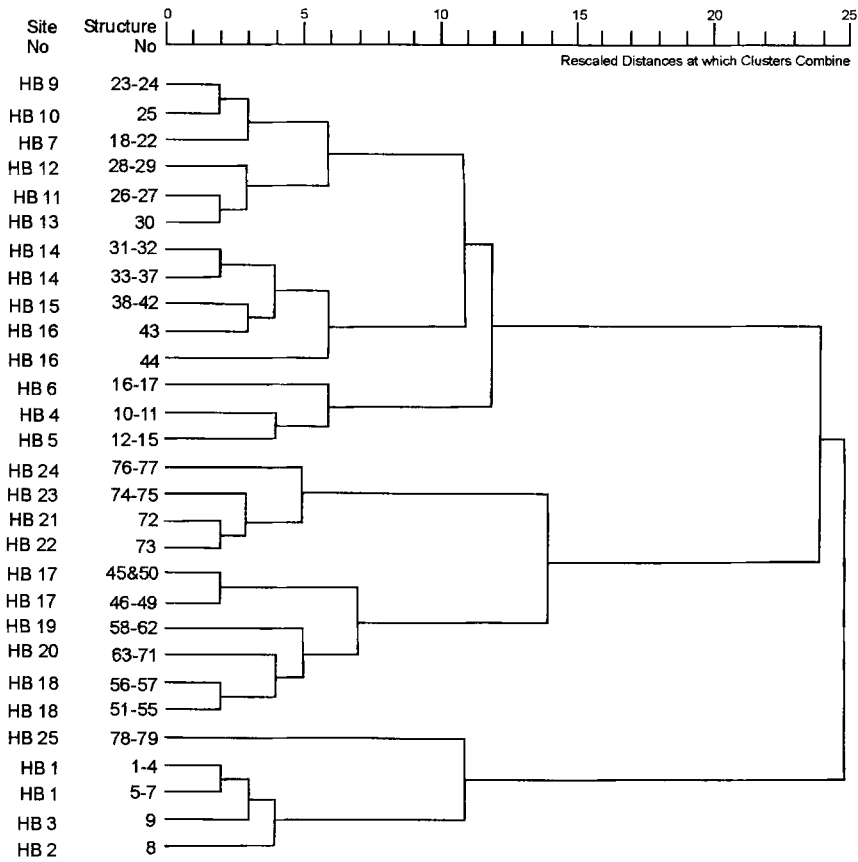


Fig. 11. Dendrogram for the Homa Bay subregion clusters

make very little sense beyond the first level where primary clusters are identified. Such groupings that are supposed to show association between structures become unreliable when sites separated by major geographical features such as hills and rivers are grouped together. Such sites may have had very few or no links across such features, as opposed to having links with those with which a territory was shared on one side of a river or hill. As seen in the cluster maps, CA often lumps together sites that are separated by major geographical features, particularly at higher levels of clustering. In this case study, therefore, the cluster analysis results are only relevant at the first level of analysis. These 'primary clusters' also correspond to acceptable sizes of family occupation units and their expansion patterns due to a natural increase in areas of occupation. Beyond the primary clusters, however, the results become unreliable and cannot be used accurately to provide predictions of relationships that might have existed between sites and their occupants.

Apart from the overall clustered pattern of distribution, there are sub-patterns that can be seen in the different sub-regions. These are related to where the sites are found, which also contributes to the way the sites form groups on the cluster maps. In the Macalder sub-region, most structures are located on hills where major clusters are found. This may be referred to as a 'hill-settlement' sub-pattern and is present in the other sub-regions, especially Karungu South. These hilly localities are also the areas where raw materials for construction are most readily available. In Karungu North sub-region,

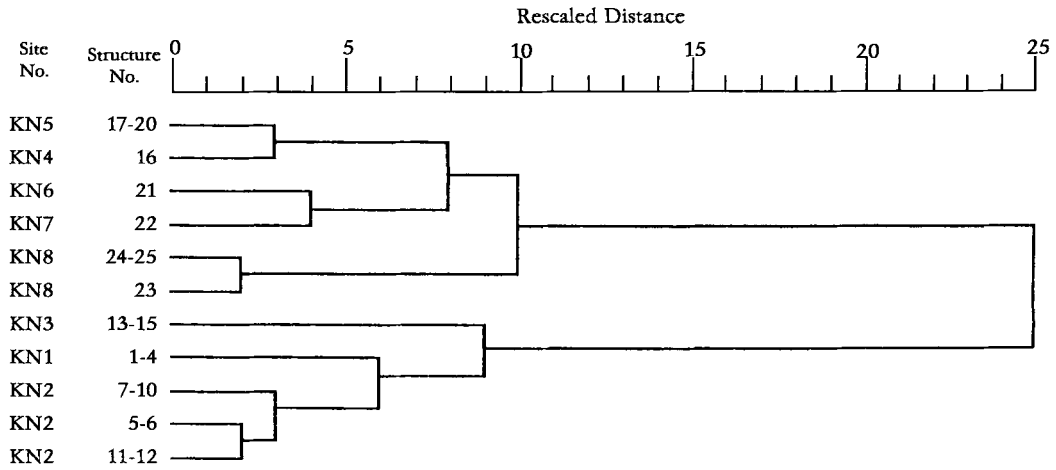


Fig. 12. Dendrogram for the Karungu South subregion clusters

structures were also located close to the lake in the western cluster and on headwaters of streams in the eastern cluster. These form ‘near-lake’ and ‘headwater’ settlement sub-patterns. The headwater sub-pattern is also found in the Homa Bay sub-region. Due to the swampy nature of the sub-region, some structures were located on higher ground or dry spots, with the result that this sub-region is also characterised by a ‘dry-spot’ sub-pattern of settlement.

Both the general clustered pattern and the sub-patterns show that structures were located on elevated land where building materials were readily available. Almost 70% of the structures are found in areas meeting this criterion (Table 3). Another important factor for consideration was source of water. Most settlements were close to water sources with the distances between settlements and water sources not exceeding three kilometres. The majority of the settled areas were located less than a kilometre away from water

Table 3: Distribution of sites according to geographical setting, and in relation to distance from water sources

| <i>Geographical setting</i> | 1 | 2 | 3 | 4 | 5 | Total |
|--------------------------------|------|-------|-------|------|------|-------|
| Number of sites | 11 | 7 | 0 | 27 | 93 | 138 |
| % | 8.0 | 5.1 | 0 | 19.6 | 67.3 | 100 |
| | | | | | | |
| <i>Distance in km to water</i> | < 1 | 1 - 2 | 2 - 3 | > 3 | | Total |
| Number of sites | 83 | 41 | 9 | 5 | - | 138 |
| % | 60.2 | 29.7 | 6.5 | 3.6 | - | 100 |

Key: 1 = Lakeshore areas; 2 = Near-river locations; 3 = Valley sites; 4 = Raised ground; 5 = Hilly areas.

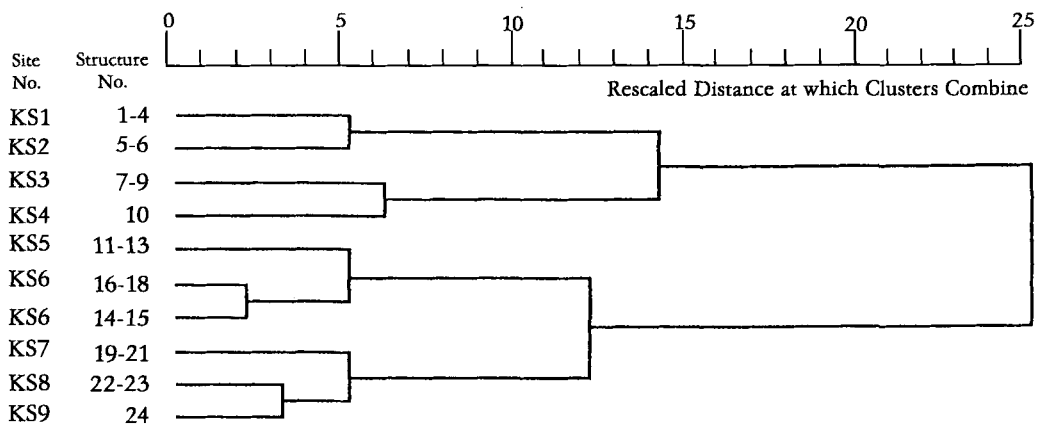


Fig. 13. Dendrogram for the Karungu North subregion clusters

sources which included Lake Victoria, permanent rivers, streams, springs and man-made dams. Other factors that controlled the distribution of settlements include accessibility and the availability of suitable agricultural and/or grazing land as well as room for population expansion and increase.

Population and spread of structures

The architecture and history of structures indicate that settlements were established and expanded depending on the number of people who occupied each locality (Onjala 1990). The extension of walls by knocking down wall sections to expand enclosures is architecturally visible at certain sites. The construction of simple structures as additions to older ones at already settled areas is also visible. The additions and extensions of structures may be linked to population growth at localities where such modifications were carried out. Population growth, therefore, seems to have directly affected the spread and distribution of structures at sites across the entire region. This led to the establishment of simple and multiple structure sites, as well as influencing the general distribution of the structures. Population growth occurred in two possible ways, namely, natural increase in the population residing at a locality and increase caused by an influx of immigrants to a site. These, together with other social factors such as competition between groups, led to the founding of new sites where more structures were constructed. While the demographic composition of different structures is a topic yet to be studied, population growth remains a factor for understanding the distribution of the structures in the region. It can be hypothesized that when a settlement composed of either simple or multiple enclosures experienced a population threshold, extensions to the original enclosures or on-site expansion by constructing additional structures was carried out. This process of expansion continued until a locality exceeded its carrying capacity and, as a result, new settlements were founded in other suitable areas.

The model for settlement expansion envisaged here entailed a number of stages. Initially, in the phase of immigration or significant natural population increase, an established settlement was expanded through extensions to the original structure. Such expansions depended on the availability of building materials and other resources the population depended on. Expansion then involved the building of small structures as extensions of the original

ones or the knocking down of wall sections to enlarge old enclosures. This would be followed by the construction of “daughter” structures a few metres away from the original structures. If more expansion was required, a second generation of daughter structures, making use of any remaining building materials, was constructed. If further expansion was necessary, a new locality would be selected for the establishment of a new settlement. All factors remaining constant, the process and stages would repeat themselves at the new locality. The processes would also continue at several sites concurrently. In cases where there was competition between groups, populations at certain localities would become divided and new structures would be constructed at new localities as a means of laying claim to new territory. Newcomers would claim ownership over unoccupied land and, in some instances, intense competition may even have led to skirmishes and battles between groups. This would occasionally lead to certain groups being ejected from their settlements and being forced to create new ones. Judging from oral traditions, this was common in the region with the earlier Bantu groups being ejected from their settlements by the Luo groups that began to arrive in the region from c. AD 1590 onwards.

Sections of the Luo groups also competed for localities amongst themselves, which caused the displacement of certain sections by others. The Macalder sub-region, which was occupied later (Butterman 1979), experienced this kind of conflict with the Kanyamkago, Kadem, Kanyamwa and Kabuoch fighting for several localities. At the turn of the nineteenth century, however, competition died out and resources such as land were permanently acquired as communities started following colonial rules. Major population movements ceased and the use of structures as fences around settled areas lost currency, with people opting for open and single-family unit settlements. Construction of structures therefore ended and was followed by abandonment, which has left us with the kind of settlement and structure distribution discussed in this paper. Limited reoccupation of structures occurred at different times as new groups moved into the region but the abandoned status of most of the structures remained a permanent feature. The structures therefore became archaeological entities.

Ethnohistory and *Ohingni*

As mentioned above, the term ‘*ohinga*’ is a Dholuo word, and perhaps as a consequence the stone structures of Southern Nyanza have often been regarded as being associated with the spread of Luo speakers into the Lake Victoria region from c. AD 1500 onwards. Recent archaeological excavations at Thimlich Ohinga lend some support to this view. Specifically, the ceramics recovered from these excavations are decorated by means of the twisted-cord roulette technique, which is the main mode of decoration employed by modern and historically documented Luo potters (e.g. Wandibba 1977; Herbich 1987). Also, the range of vessel forms represented in the excavated assemblage was similar to that found among modern Luo groups. It was also noted at Thimlich that the organisation of space within the various enclosures, particularly the placing of house sites around the inner perimeter and the presence of centrally located livestock enclosures, closely resembles the spatial layout of contemporary Luo homesteads.

This being said, it is well known that movement of people into the south-western Kenya lake region occurred from different areas of East Africa, and that these included various Bantu-language speakers as well as Western Nilotes (Ayot 1979; Ogot 1967; Ochieng 1979). In the available oral traditions, groups that are associated with the

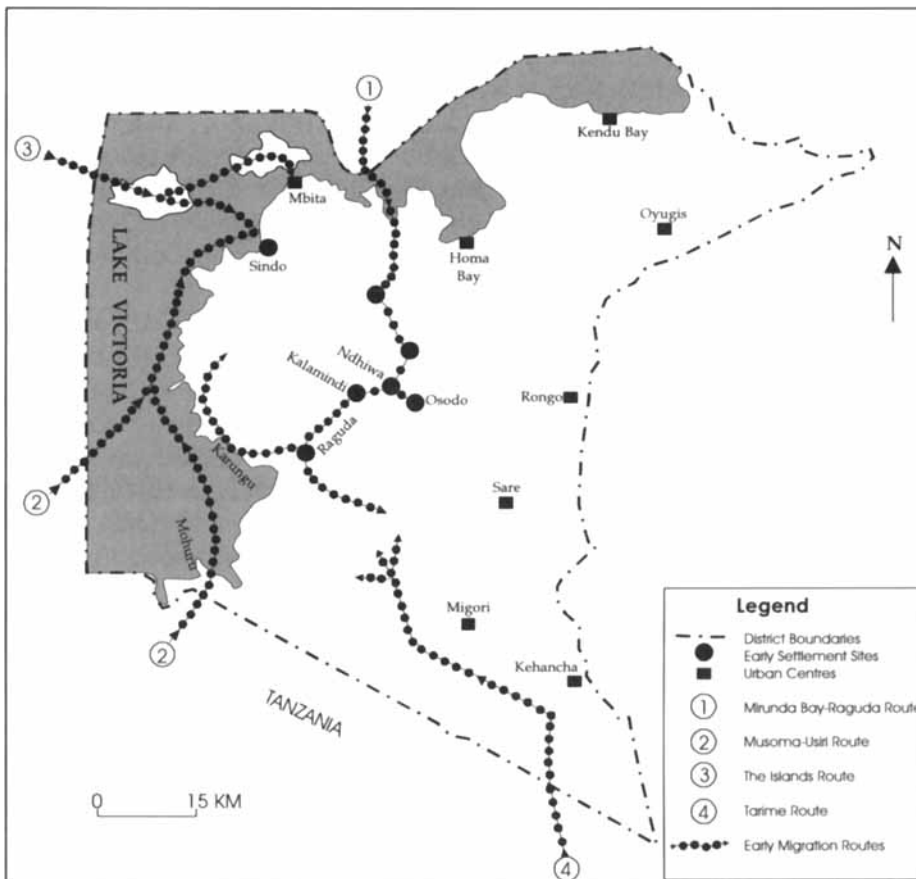


Fig. 14. Early migration routes within the research area

construction of *ohingni* include the Bantu groups of Waturi, Wagire, Wakiala, Wasamu, Walandu, Wagimbe, Wasohi, Wakisasi, Wasokolwa, Kamageta, Kakan and Kakseru who arrived from the north (route 3, Fig. 14), and the Wategi, Kamagambo, Miuru, Kaksingiri and Kasgunga who arrived from the south (routes 2 and 4, Fig. 14). The Luo groups included the Karungu, Kanyamwa, Kadem, Kabuoch, Kaler, Kanyamkago, Kamgundho and Kanyidoto, all of whom arrived from the north (route 1, Fig. 14)⁴. In other words, a variety of different groups entered the region at different times and in different waves of immigration settling at several localities, anyone of which may have built or utilised some of the *ohingni* in the area.

Using oral traditions gathered from the groups occupying the region, Ayot (1981) set a date for the arrival of the earliest immigrants to South Nyanza, mainly the Waturi,

⁴ The occupation of the lake region occurred from all directions. Bantu groups arrived across the lake making use of lake islands for settlement before eventually settling on the mainland. Other Bantu groups arrived by land from northern Tanzania and hence began their settlement from the southern part of the region in areas such as Mohuru. With the arrival of the Luo groups mainly from the north through Murunda Bay, the Bantu groups retraced their steps back to what is now northern Tanzania where they continue to live. The routes shown on the map were constructed from a combination of published oral traditions and those collected during fieldwork.

Kamagera and Kakseru, at between 1596 and 1688 and the Wategi and Miuru at between 1655 and 1711. These groups have been associated with the structures that appeared first in the region, and are therefore considered the pioneers of the tradition. However, these groups were driven away or assimilated by later waves of immigrants, particularly the Luo who arrived from the north. They pushed away or assimilated the earlier Bantu groups as they took over the use of structures. The Luo then adopted the tradition and continued to use it as they expanded into other parts of the region. This adoption theory may therefore explain the archaeological similarity of all structures within an area where people with different cultural backgrounds interacted.

Regardless of which group or groups founded the building tradition, it would appear that construction of structures was carried out in the course of movements and initial settlement within the region. The distribution of major sites corresponds to the routes and points of dispersion as groups spread out from certain points. Strict correlation of structures with the routes taken cannot be established however, without more detailed work involving a series of excavations at different sites. Architectural details of the structures, which suggest similarity in all the areas occupied, point to a single coherent settlement pattern created by people with similar cultural background. This, however, undermines the evidence outlined above that different groups from Bantu and Luo backgrounds, with different cultures, were responsible for the structures. More investigation will probably provide answers to this problem.

The choice of settlement localities was carefully considered. Availability of building materials was an important factor. Once this was established, other factors such as sources of water, availability of arable and/or grazing land and accessibility were considered in order to arrive at the final decision on whether or not a locality was settled. As discussed above, the most favourable locations coincided with hilly areas where loose rocks were abundant and could be easily pulled out and used for structure construction. Construction was obviously a laborious task, but according to Luo oral history was achieved through traditional work support groups known as *saga*, a system whereby members of a community come together to perform a task for the benefit of the entire community or sections of that community. *Saga* groups were effective in the construction of the *ohingni* as they operated under the command of community leaders and/or chiefs. New settlements could therefore be established within remarkably short periods of time at the command of such leaders. The work involved both men and women, and sometimes children. While men, supervised by traditional masons, worked on the actual construction of the walls, the women and younger men transported and supplied the required building materials to the respective building points. Other women, especially the older ones, prepared food that was normally taken at the end of the day and the traditional beer which accompanied it. A non-alcoholic drink made from maize flour, known as *nyuka*, or an equivalent of porridge, was prepared in large quantities and served throughout the working period.

The significance of the *Ohingni*

The results of this study provide important insights into the settlement system within the south-western Kenya Lake Victoria region that should be investigated further and tested using other statistical methods. For instance, correlation between settlements and the factors discussed could be investigated using computer models and geographical

information systems (GIS), and by using tests of significance such as Chi-Square. For both financial and practical reasons, such approaches were not available to the author of this paper at the time the research was undertaken. There are also some limitations to the type of data collected and the different variables used in the analyses presented above. These include the information concerning the social context of the *ohingni*, which was derived from the current occupants of the area who are separated by many generations from the actual builders of the structures. Other problems hindered better statistical manipulation of the data derived from the structures. These problems should be overcome in future research projects on these structures. Additional approaches will most likely generate clearer trends and relationships between structures and the physical environments they occupy, and between structures and the behavioural patterns of their builders.

Specifically, as archaeological entities, the *ohingni* define a tradition that has been attributed to early immigrants into the south-western Kenya Lake Victoria region. Archaeologically, they pose the problem of how people with different cultural backgrounds and linguistic origin used a similar tradition to construct the enclosures which marked settlement localities. Despite what is known from the previous work done on the structures and the settlement history that has so far been gathered for the south-western Kenya lake region (Ayot 1979, 1981; Ogot 1967; Onjala 1990, 1994), identification of the pioneers of the stone structure tradition remains elusive. All groups currently occupying the region claim ownership of structures at various localities. To these groups, their immediate ancestors were the pioneers and builders of the structures. This limited knowledge makes it impossible to state confidently which groups first developed the building tradition that created the archaeological remains under discussion. It is also not possible at the moment to establish the duration of occupation at the various structures or the sequence of separate settlements. The evidence at hand therefore remains a source for first-order hypothesis which might explain the historical origin and function of the *ohingni*.

Similarly, the nature of interaction between the various groups and with their environments as they created these important archaeological signatures remains to be investigated by both archaeologists and historians. Archaeological remains from within the structures reflect exploitation and use of the environment in a variety of ways, including fishing, hunting, farming and grazing. Investigation of these aspects, as well as economic activities such as trade, remain at an early stage and must be addressed for a better understanding of the societies that created the *ohingni* tradition. Stone structures also abound in other parts of sub-Saharan Africa and have been linked to the development of inter-regional trade and the rise of kingdoms. While it seems unlikely that the *ohingni* of south-western Kenya lake region were linked to economic and political events of any magnitude, it is still important to investigate and establish their role and purpose beyond their immediate localities. How are they, for example, related to other structures within the East African region and other parts of sub-Saharan Africa?

Future research may therefore focus on how the *ohingni* can form the basis for testing some of the conclusions and assumptions provided by both nearest-neighbour and cluster analyses in this paper. The socio-political and economic basis for the construction of the structures may be explained through oral tradition and archaeology. Such an approach will provide a means for comparative interpretation of the meaning of the stone structures and may be applied elsewhere within sub-Saharan Africa. Lastly, the *ohingni* remain significant as independent units of analysis through which the meaning of oral history and its relationship to archaeological evidence may be explored.

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