

The potential impact of engineering works on the archaeology
of the Trans-Caprivi highway alignment

J. Kinahan

Quaternary Research Services

P.O. Box 22407, Windhoek, Namibia

Commissioned by

Environmental Evaluation Associates of Namibia (Pty) Ltd.

Completed 17 March 1993

QRS Job 5

CONTENTS

Introduction

Regional history

Trans-Caprivi Highway

(a) Bagani to Mohembo

(b) Divundu to Kongola

(c) Kongola to Katima Mulilo

(d) Katima Mulilo to Ngoma Bridge

Recommendations

Estimates for field inspections

References and notes

INTRODUCTION:

The history of human settlement in northeastern Namibia is little researched and that of the Kavango, Kwando, and Linyanti area, or Caprivi Strip, has received far less attention than it deserves. The paucity of relevant published sources, archival materials and fieldwork results severely limits the scope of the present report which attempts to sketch the main processes and events in the history of the area, with a view to identifying the likely impact of road engineering works on the remains of human settlement. Such remains as might exist in the area are obviously of some potential importance to an understanding of settlement history and landuse, particularly where these have a lasting effect on the local environment. It is also important to establish the historical reasons for the present distribution of centres of settlement and lines of communication, particularly where these have to do with changes in economic and political structures, rather than simple environmental considerations.

In the brief regional history which follows this introduction, the political and economic background is set out, while the physical setting and general appearance of settlement remains is described in the subsequent part of the report which attempts to specify the likely impact of the roadworks in each of four defined stretches of road. These are: Bagani to Mohembo; Divundu to Kongola; Kongola to Katima Mulilo; and Katima Mulilo to Ngoma Bridge. The sections dealing with each of these stretches of road identify specific site localities and kinds of evidence where these are already known and offer reasons for the possible existence of sites where no fieldwork results are available. Where there is little likelihood of damage to archaeological and historical sites reasons for this are offered on the basis of negative field survey results from comparable areas. Finally, the report suggests some simple guidelines which should help to minimize the impact of engineering works on the remains of human settlement in this area. It is, however, to be stressed that direct field inspections are also required in some instances and estimates of time and cost are given.

REGIONAL HISTORY:

The present alignment of the road which is to become the Trans-Caprivi Highway probably follows the route pioneered by Streitwolf when he was appointed Imperial Resident in 1908 [1]. Prior to the demarcation of the Caprivi and its acquisition by Germany as a consequence of the Zanzibar agreement with Britain in 1890 [2], communications in this region followed the courses of the rivers Kavango, Kwando/Mashi and Linyanti [3]. The existing road between Bagani and Mohembo still follows one of these important precolonial trade-routes which connected Ngamiland and the Tawana State with central Angola [ibid; 4].

The Kwando/Mashi route into southwestern Zambia and the Linyanti route into the middle Zambezi were rendered largely obsolete by the constraints of the modern political boundaries.

Parts of the Caprivi Strip fell under the direct control of the BaLozi Kingdom from the seventeenth century, and the Tawana State in the late eighteenth century and early nineteenth century [4]. The eventual expansion of European merchantile interests into Ngamiland in the mid-nineteenth century [3] brought several large commercial hunting operations [5] which occasioned an economic boom lasting more than twenty years. Although the Linyanti was recognized as one of the prime sources of ivory [6] in a region which had already established itself as a major supplier of hippo teeth [4], most of the Caprivi remained peripheral to regional centres such as Toteng and Kgwebe [3].

By the 1880s commercial hunting opportunities began to decline; the rinderpest epidemic of 1896 further reduced the wealth of the region, decimating livestock holdings and effectively disrupting transport of trade goods by oxwagon. Moreover, colonial rule had become effectively established in the neighbouring British possessions and by the time Streitwolf arrived the Caprivi had become an economic backwater, its value being that of a German bridgehead into central Africa [11]. So isolated was the area that apparently the Resident sited the post of Schuckmansburg in a bend of the Zambezi River where it could be as close as possible to the British post in Barotseland, and still remain on German soil. Only in 1935 did the administrative centre for the Caprivi Strip move to the modern settlement of Katima Mulilo [15].

The close integration of the eastern Caprivi Strip with neighbouring British territories was partly the result of its isolation from the rest of northeastern Namibia by virtue of the western Caprivi sandveld, an area without any settled population or easy lines of communication. Missionary advances from the west along the Kavango River in 1903 were rejected by the Kwangari and Mbundza [7], who effectively barred access to the western Caprivi, as did the Tawana in Ngamiland whose opposition to the entry of German missionaries lead to the temporary abandonment of all missionary efforts [12]. When in 1908 the Police Zone was extended to the Kavango, the Catholic Church mounted an expedition by canoe and succeeded in gaining a foothold at Andara, where the Oblates of Mary Immaculate established a mission in 1910 [8]. This lead the Portuguese to build a fort on the opposite bank of the River in a futile attempt to prevent the bulk of the Gciriku from moving into Namibia [ibid.]. Although not much is known of related developments in Angola [13], annual slaving expeditions still reached the vicinity of Andara as recently as 1909 [14]. Once the two centres of Andara and Schuckmansburg were established at opposite ends of the Caprivi Strip, communications became more regular and the crossings at Bagani on the Kavango River and Kongola on the Kwando River increased in importance.

However, when German colonial rule ended in 1915 the eastern Caprivi was still so remote from administrative centres in Namibia that in 1921 it was placed under the control of the British High Commissioner in Bechuanaland [15]. Only in 1929 was the area placed under the South West Africa Administration, although difficulties of access remained and in 1939 the eastern Caprivi was administered directly from South Africa. In the 1960s the construction of a gravel road to Katima Mulilo received special motivation by a government Commission of Enquiry [16].

The movement of the Gciriku into the area adjacent to the western Caprivi seems not to have placed undue pressure on the local agricultural resource base, since Bagani lay very near the limit of Mbukushu settlement along the Kavango River and the area was much more thinly populated than the riverain terraces further west. In fact, the full extent of the recently proclaimed Mahangu Park was traditionally reserved for hunting by the Mbukushu chiefs [9]. According to oral historical traditions, the Mbukushu in this area originate from the Kwando River, but separated by the western Caprivi the two lost contact almost entirely [4]. Although there are large Mbukushu settlements within Botswana along the Kavango and Thaoge Rivers such as at Escha, these are mainly refugee communities which left southeastern Angola after 1975 [10].

Large-scale population movements also occurred in eastern Caprivi during the last several centuries, the most significant being that of the Fwe who moved into the savanna east of the Kwando/Mashi in about 1800, accompanied by small communities of Totela and Kxoé. The Fwe settled alongside the Subiya who had entered from the northeast about 100 years earlier [17]. At about the same time, the swamp-dwelling Ba Yei (Yeyi) moved into the neighbourhood of Sangwali from northern Botswana at the end of an extraordinary series of peregrinations along the watercourses of the Kavango, Mashi and Chobe Rivers [4]. Today, BaYei living in Namibia mostly reside near Sangwali where their access to services is not interrupted by seasonal flooding. The expansion of the Balozi to the southern limits of the Lozi plain as far as the present Senanga District in Zambia was the major cause of BaYei and Mbukushu emigration. By the early eighteenth century direct Lozi control extended to Katima Mulilo and fifty years later further conquests were launched to the south [4]. These movements were exacerbated by large-scale slaving and whole communities are reported to have fled into the depths of the Okavango swamps [18]. Missionary penetration of the eastern Caprivi was nonetheless achieved much earlier than in the west, with David Livingstone as one of the first arrivals in 1851 [19].

Although the composition and distribution of communities in the Caprivi was profoundly affected by the events of the last three centuries, subsistence farming, the major economic activity in the region, is primarily dependent on the opportunities and constraints of the local environment. A number of detailed specialist reports on the Caprivi environment are available [20] and although less research has been carried out on the ecology of the subsistence economy it is possible briefly to sketch those major characteristics of direct relevance to this report [15].

The general pattern of population distribution and landuse illustrated by the accompanying map (Figure 1) clearly shows the limited extent of arable land in the western Caprivi and the vast expanse of wooded sanddunes which lie between the Kavango and the Kwando Rivers. Of the FAO land-use categories indicated on the map [28], only the river floodplains (Lf) provide suitable conditions for rainfed agriculture. The alluvial fans (La), although far more extensive, are of marginal value for cultivation. The rest of the Caprivi varies from longitudinal dunes (Ldl) suitable as rangeland but with severely limited water supplies, to extensive swamps (Ww) without any agricultural potential. In between are sanddune areas with pans (Lsp) and seasonally waterlogged land (Ws), both suitable as rangeland.

Among all communities the cultivation of maize, millet and garden vegetables is carried out wherever suitable soil conditions exist. Areas subject to seasonal groundwater percolation are particularly favoured, while permanently waterlogged soil is practically useless for cereal crops. Cattle production is limited by the incidence of tsetse (*Glossina morsitans*) although the traditionally favoured Sanga breed is decidedly more resistant than others [21]. The combination of crop production with seasonal fishing and cattle raising is seldom possible in any one locality and for this reason many Caprivi communities have developed complex seasonal cycles of movement and labour allocation.

Archaeological evidence of this landuse system is decidedly scarce, but it confirms some of the ethnographic evidence and reflects fairly well the modern environmental conditions illustrated by the map. In general, within the Caprivi Strip itself, archaeological sites dating to within the last few centuries are confined to the riverbank areas and in the following section detailed field survey results are used to indicate the main characteristics of so-called Iron Age settlement. Of earlier settlement still less is known, although there are indications of mid-Pleistocene habitation at several sites in the area and future research is certain to provide evidence of hunting and agricultural settlement comparable with that available from the surrounding region.

From the information available on the archaeology of Angola it appears that the southeastern region adjacent to the Caprivi Strip is virtually unexplored [22]. On the other hand, significant research has been carried out in neighbouring Zambia, Zimbabwe and Botswana such that it is possible to predict the likely archaeological characteristics of the Caprivi. For example, middle and late Pleistocene occurrences in the Rundu area of northern Namibia [23] correspond with finds from the Victoria Falls [24] and these are likely to have equivalent expressions in the Caprivi. More recent Holocene sites in northern Botswana [25] correspond with finds from southern Zambia [26] and these, too, may have local equivalents.

The arrival of Iron-Age agricultural communities in this region is provisionally dated to the closing centuries of the first millennium AD [27]. However, the southerly regions of Angola and Zambia are poorly known and the relevant parts of Namibia are virtually unexplored. The available data indicates that the expansion of agriculture into this region is associated with the western stream of the southern African Iron Age, the Caprivi area falling within the distribution of the Kapwimbwe Tradition so far described from Zambian material only. This movement would have brought the first pottery and iron-working into the area which, along with cereal crops and cattle, formed the economic foundation of settlement during the succeeding one thousand years.

TRANS-CAPRIVI HIGHWAY:

At present, detailed archaeological data is only available for the Bagani to Mohembo stretch of the envisaged Trans-Caprivi Highway ^(Fig. 1, a). The results of a detailed foot survey of the area between Dikuyu and Mohembo

river is similar. The bulk of both modern and archaeological sites occurs within the distribution of subcropping Nosib rocks and the low density of the downstream distribution coincides with the deepest surface cover of the Kalahari sands.

Few archaeological materials other than ceramics were recovered from the Kavango River sites. Glass trade beads were however found on four of the sites and included a large red simple-wound bead and a small opaque blue drawn barrel-shaped bead on Site 3. The single opaque white drawn barrel-shaped bead found on Site 13 was identical with the twenty five white glass beads from Site 18. The blue bead from Site 3 was matched by a further bead on Site 23 found in association with fragments of flaked stone. A tanged iron awl point was found on Site 17 and fragments of trimmed ostrich eggshell were found on Site 11. Ceramics were associated with all of these finds, although sherds with identifiable decoration motifs were scarce, occurring on only seven of the sites. The total frequencies for ceramics are given in Table 2 which also gives minimum vessel number estimates for the sites.

Figures 3 and 4 include examples of all the style elements recognized in the Kavango River samples and show their combination and placement where these could be determined. At Kamutjonga (Fig. 1, Site 17), a total of 204 sherds from at least eight vessels (Table 2) was recovered during test excavations in a midden exposed by ploughing. Two radiocarbon dates were obtained from the deposit: 110 ± 45 BP (Pta-3758) for charcoal encrustations on sherds, and 40 ± 40 BP (Pta-3745) for collagen from associated bone fragments. The calibration of these dates suggests that occupation postdates 1820 AD (J.C. Vogel, pers. comm.). Decoration on sherds from Site 17 was in all cases incised, with cross-hatching as the most common style element and usually placed as a band immediately below the vessel rim. Among the seven examples of this element found at the site, two were combined with a lower band of alternating vertical and horizontal double herringbone incisions. Figure 3 illustrates this combination on the reconstructed profile of a small vessel (a) and in Figure 4 other examples of related decoration from Site 17 are shown. On the Figure 4 sherds, the cross-hatched element is placed below the rim on a tall straight-necked vessel (17a); as a narrow band such as on the Figure 2 vessel (17b); combined with horizontal line incisions either above or below the cross hatching (17c); or apparently absent in the case of a rim with a low band of herringbone enclosed by horizontal line incisions (17d). In Figure 3 an alternative set with none of the above elements is illustrated by a rim and shoulder reconstruction of another vessel (b) from the Site 17 sample: three regular bands of parallel incisions enclose a neck decoration of triangles alternately filled by further parallel incisions.

The cross-hatched rim decoration occurred at only one other location, Site 23 (Fig. 2) where it was associated with undecorated rim sherds from two other vessels, one with an unevenly squared profile and another with a rounded and slightly everted profile. Further undecorated rims were found at Sites 4, 7 and 17 with another example from Site 19 showing traces of countersunk drilling such as for repair by stitching (Fig. 4). The incised decoration of the body-neck junction on a sherd from Site 4 (Fig. 4) was probably not accompanied by decoration on the rim. A further three decorated rims included a comb-stamped example from Site 1, rough

are described below, with relevant observations from a survey of the area between Gumare and Sepupa in neighbouring Botswana. These survey results, along with other data from the surrounding region help to indicate the likely general characteristics of archaeological sites in parts of the Caprivi riverain environment affected by the remaining three stretches of the envisaged highway.

(a) Bagani to Mohembo: The 55km stretch of the Kavango River between Dikuyu and Mohembo consists mainly of river floodplain with occasional rock outcrops, particularly in the vicinity of Andara, and extensive areas of seasonal wetland further down towards Mohembo. To survey this area the entire southern side of the river was searched in 5km blocks; the actual riverbank was intensively searched and the fields to the southwest of the rivercourse were covered in a more erratic fashion. Special attention was paid to the local context of archaeological finds so that their occurrence could be compared with the pattern of modern settlement in the area. Of the twenty three archaeological sites located in the course of the survey, only the site of Kamutjonga merited test excavation. On the other sites finds were either identified in the field or collected for laboratory examination.

Fig. 2 shows that both archaeological sites and modern settlements were unevenly distributed along the river. The general characteristics of this distribution are summarized in Table 1 which records a peak in the archaeological site density at about the midpoint of the distribution. In this area of highest density the distances between sites averaged 1.0km, consistently less than at other points along the river. Most of the sites were within 0.5km of the river but these distances varied without any obvious relation to the density of the sites. Three of the sites in the high density area were in fields, one of which had been recently ploughed. Of the remaining three sites in this area, two were in the neighbourhood of existing villages and one was on the riverbank itself. Sites between Dikuyu Island and the high density area were distributed in much the same fashion. Only two of the ten sites downstream from the high density area were in the vicinity of modern villages; two more were exposed by erosion gulleys and two were located in fallow fields. The final five sites in the downstream distribution were located on the banks of the river. In this lower part the course of the river is a great deal wider than it is shown in Figure 2, where only the present course of the river is indicated. Unlike the vicinity of Dikuyu Island, where the river is deeply cut and channeled in places by rocky banks, in the downstream area wide beds of reed separate the present course from its former banks.

The comparative modern settlement data in Table 1 show a high density peak similar to that of the archaeological distribution. Although the actual frequency of modern settlements is approximately twice that of the archaeological sites, there are striking similarities between the two distributions. The density of modern settlement drops by nearly half within 20km upstream from the midpoint of the distribution. Only in the vicinity of Andara is the density somewhat higher, where the mission station probably accounts for the greater concentration of settlements. Within 20km downstream of the midpoint, the number of settlements drops to zero and the lower parts of the rivercourse are uninhabited today. On the whole, distances between settlements are approximately half those recorded between archaeological sites although their location with respect to the

parallel diagonal incisions below the rim at Site 13, and alternating diagonal incisions below an undercut rim with punctate impressions at Site 21 (Fig. 4).

Ceramic style elements offer a reliable means of site comparison [29] and when these are combined with the information from other finds sites may be grouped by assemblage identity and relative age. In the present case, virtually all of the finds correspond with the traditional ceramic style repertoire of the Mbukushu, thus confirming the similarity in the site distribution which indicates a fairly recent occupation of the area. The archaeological finds therefore confirm and amplify the ethno-historical sources discussed in the previous section. In general, these finds indicate a pattern of settlement closely tied to the river floodplain and most densely concentrated where soil conditions were most favourable. The indications are that there were no settlement units larger than exist in the area today and that the thinly populated downstream area was probably occupied by hunter-gatherer communities, to judge from the presence of stone tools and ostrich eggshell beads. Independent data from a somewhat longer survey between Gumare and Sepupa in Botswana confirm the very close association between Mbukushu settlement and the river floodplain. The survey in Botswana covered a road alignment situated between 5 and 10km from the west bank of the Kavango and although the proposed road crossed many cleared fields it never approached areas of settlement and the survey encountered no archaeological sites at all [30]. Further confirmation of the fact that no sites occur at this distance from the river was obtained from a more recent survey of the proposed road between Sepupa and Shakawe/Mohembo [31].

On the basis of these observations it is possible to predict that archaeological sites are likely to be disturbed by the construction of the Bagani to Mohembo road which is situated closer to the river than the continuation of the same road into Botswana. Unless the road deviates from its present alignment however no further damage should occur, other than in the excavation of borrow pits and in the construction of the turnoff to the Bagani bridge.

(b) Divundu to Kongola: Although the immense area of wooded longitudinal dunes lying between the Kavango and Kwando Rivers has never been explored archaeologically, it is possible to make some predictions on the basis of observations from a survey of the Nyae Nyae area about 200km to the south [32]. Other investigations along the Kavango and Zambezi Rivers provide further useful information.

The survey of Nyae Nyae attempted to establish the relationship between modern Zhu/twasi settlement and the occurrence of archaeological sites, and to test some current postulates concerning the relationships between group size, length of occupation and diversity of archaeologically visible activities [33]. Two findings are of direct relevance to the Caprivi situation: the archaeological visibility of sites does not depend on group size or length of occupation, but on the existence of fixed points on the landscape which are used over and over again, even by very small groups such as hunting parties; secondly, activities such as hunting kills hardly ever occur in the same place and are therefore almost invisible archaeologically, even if they involve large animals.

The Caprivi woodlands are largely devoid of fixed points, unlike the Nyae Nyae area which has established pans with springs and calcrete headlands as well as clearly visible groves of baobab trees which were very important sources of honey. These particular landscape features were always associated with archaeological sites. However, hunting and gathering activity in the Nyae Nyae area also extended deep into the Manketti woodlands up to 50km away from the pans and their waterholes. The remains of a giraffe kill, found in the course of the survey provide a good example of site formation processes which would militate against the preservation of archaeological evidence of hunting in the Caprivi woodlands.

The accompanying flow diagram (Fig. 5) illustrates the dispersal of remains from a sub-adult giraffe killed at Manketti Beacon between six months and one year prior to the survey. An area of about 2km² surrounding the site was searched in detail and all remains recorded. The fact that there were few bones of other species and the fact that the giraffe was an immature specimen with unfused epiphyses allowed fairly confident assignment of the remains to a single individual. The analysis assumes a working total of 155 skeletal parts at death. On the ground the assumed kill and butchery sites were a mere 10m apart. Large sections of hide and the entire cranium marked the site where the animal was actually killed. At another kill and butchery site in Botswana, only the cranium remained [34], but in the present case a variety of disarticulated parts marked the focus of intense butchery.

Butchery activity was identifiable from the great profusion of bone splinters and the concentration of bones showing cuts from axes. Between 10m and 350m from the butchery site were three cooking hearths with further remains of the kill. The flow diagram also shows the paucity of remains at the hearths, conventional subjects of archaeological attention, compared to the butchery site itself, and the combined scavenger assemblages. The scavenger assemblages were identified by their scattered distribution around the other sites, their lack of associated cultural remains and the presence of tooth marks and breakage patterns consistent with the action of scavengers.

The effect of depletion by scavengers and the numerical importance of the butchery site are shown in the accompanying histogram (Fig. 6). If the entire presumed death assemblage is used, the extreme falloff suggests a 1:200 probability that the animal will be represented by one identifiable skeletal part at the hearth sites. When the lost skeletal parts (comprising 86% of the presumed total) are excluded the probability falls accordingly. Assuming that the scavenger assemblage would not be available for archaeological analysis, the relative difference between the remaining assemblages suggests an emphasis on the special activity of butchery, rather than on the hearth, the usual focus of domestic activity. Even when intense butchery is allowed as an agent of assemblage depletion (and the near-completeness of most bones argues against this), the frequency distributions from Manketti Beacon suggest that losses to scavengers probably approach the 80% level. Further depletion over time in the case of an archaeological kill site would severely reduce the chances of recognizing hunting activity dating to the early Holocene in, for example, the wooded dunes of the Caprivi, where kills would occur in virtually random locations.

These comparative data suggest that in the area between Divundu and Kongola there is little chance of predicting archaeological sites which might be affected by the development of the road. However, it is important to note that mid-Pleistocene remains are recorded from the Sambyu calcretes and also occur as conglomerates in the vicinity of Katima Mulilo. Further occurrences are likely in the Divundu-Kongola area, particularly if large borrow pits are excavated to obtain calcrete for the road bed. The Sambyu site was very extensively damaged by borrow pits for the Rundu section of the Trans-Caprivi Highway.

(c) Kongola to Katima Mulilo: Although the construction of the existing bridge and its approaches was accompanied by considerable earthmoving and disturbance of the Kwando River banks, upgrading of these facilities would lead to even more disturbance and the potential destruction of important archaeological sites. The locality itself has not been inspected for archaeological sites, but it is in many ways similar to the Kavango River area in the vicinity of Bagani, already identified as a sensitive locality. In all probability, therefore, the Kongola bridge area is likely to contain archaeological sites.

(d) Kongola to Katima Mulilo: Beyond Kongola itself, on the road to Katima Mulilo, the landscape is dominated by open woodland with occasional pans and marshes. This area is unlikely to contain any important archaeological sites, but the approaches to Katima Mulilo are on somewhat higher ground more suitable for cultivation and having a greater probability of archaeological remains. Furthermore, the vicinity of the Katima Mulilo pontoon ferry has several outcrops of conglomerate rock containing stone artefacts of mid-Pleistocene age. The site is similar but probably smaller than that of Sambyu although it should be inspected if the road approaches to the border post and pontoon ferry are to be upgraded. On the whole, however, this particular area is so heavily disturbed by the excavation of rubbish dump pits for the town of Katima Mulilo that the major damage has probably already occurred.

(d) Katima Mulilo to Ngoma Bridge:

References and notes:

- [1] Streitwolf, K. 1911. *Der Caprivizipfel*. Berlin.
- [2] Wellington, J.H. 1967. *South West Africa and its human issues*. London, OUP: p384.
- [3] Wilmsen, E.N. 1989. *Land filled with flies: a political economy of the Kalahari*. Chicago UP: p81, Fig. 3.5.
- [4] Tlou, T. 1985. *A history of Ngamiland: 1750 to 1906, the formation of an African state*. Botswana, Macmillan. See also Chirenje, J.M. 1977. *A history of northern Botswana 1850-1910*, London, Associated University Presses, and Holub, E. 1881. *Seven years in South Africa: travels, researches and hunting adventures between the diamond fields and the Zambezi, 1872-1879*, 2 Vols, London, Sampson Low, Marston, Searle and Rivington.
- [5] One of the most celebrated explorers of this region is C.J. Andersson (1861, *The Okavango River*, a narrative of travel, exploration and adventure, New York, John Murray). Others are T. Baines (1864, *Exploration in South-west Africa*, London, Longman Green) and J. Chapman (1971, *Travels in the interior of Africa 1849-1863*, E. Tabler ed. Cape Town, Balkema).
- [6] Tabler, E. 1963. *Trade and travel in early Barotseland: the diaries of George Westbeeck 1885-1888 and Captain Norman MacLeod 1875-1876*, London, Chatto and Windus.
- [7] Gotthardt, J. 1946. *Geschichte der Katholischen Mission in Südwestafrika 1896-1946*, Windhoek, Apostolischen Vikarat.
- [8] Gibson, G.D. Larson, T.J. and McGurk, C.R. 1981. *The Kavango Peoples*. *Studien zur Kulturkunde* 56: 26.
- [9] Kinahan, J. 1986. *Settlement patterns and regional exchange: evidence from recent Iron Age sites on the Kavango River in northeastern Namibia*, *Cimbebasia B* 3: 109-116.
- [10] Campbell, A.C. 1982. *Some aspects of settlement in northwestern Botswana*. In Hitchcock, R.R. and Smith, M.R. eds *Settlement in Botswana: the historical development of a human landscape*, Botswana Society, Gaborone: 129-136.
- [11] Iliffe, J. 1969. *Tanganyika under German rule 1905-1912*, Nairobi.
- [12] Dacks, A.J. *Missionary imperialism: the case of Bechuanaland*, *Journal of African History* 13: 647.
- [13] Miller, J.C. 1977. *Angola before 1900: a review of recent research*, *African Studies Review* 20 (1): 103-116. Relevant cartographic references are Angola Instituto de Investigação Científica de Angola, 1970: *Carta étnica de Angola (esboço)*, and Portugal, Ministério das Colonias, Junta das Missoes Geograficas e de Investigações Coloniais, 1935, *Carte de Angola*.
- [14] Bierfert, P. 1938. *25 Jahre bei den Wadiriku am Okavango*. Hünfeld.
- [15] Otto, A. 1982. *Der Ost-Caprivi-Zipfel: ein historisch-ethnographischer überblick*. *Afrikanischer Heimatskalender* 1982: 87-100.
- [16] Report of the Commission of Enquiry into South West Africa affairs. 1964. R.P. No. 12/1964. Republic of South Africa.
- [17] Pretorius, J.L. 1975. *The Fwe of the Eastern Caprivi Zipfel*. Unpublished MA thesis, University of Stellenbosch.

- [18] Selous, F.C. 1881. A hunter's wanderings in Africa, London; see also Reid, P.C. 1901. Journeys in the Linyanti Region, *Geographical Journal* 17 (4): 580.
- [19] Livingstone, D. 1857. *Missionary travels and researches in South Africa*, London, John Murray. See also Arnot, F.S. *Missionary travels in Central Africa*, Bath, Echoes of Service, and Coillard, F. 1897. *On the threshold of Africa*, London, Hodder and Staughton.
- [20] Curson, H.H. 1947. The eastern Caprivi Strip. *South African Journal of Science* 43: 124-157; Schlettwein, C.H.G. Simmons, R.e. Macdonald, A. Grobler, H.J.W. Fauna, flora and conservation of east Caprivi wetlands, In Simmons, R.E. Brown, C.J. and Griffin, M. eds 1991. *The Status and Conservation of Wetlands in Namibia*, *Madoqua* 17 (2), Special wetlands edition.
- ****[21] Epstein The origin of the domestic animals of Africa.
- [22] Clark, J.D. 1966. The distribution of prehistoric culture in Angola, *Museu do Dundo, Subsídios para a historia, arqueologia a etnografia dos povos da Lunda*, Lisboa. See also the important regional synthesis of Ervedosa, C. 1980. *Arqueologia Angolana*, Ministerio da Educacao, Republica popular da Angola.
- [23] Malan, B.D. 1949. Two new South African Magosian occurrences in Natal and South West Africa, *South African Journal of Science* 46: 88-91; Netterberg, F. 1974. Calcretes and silcretes at Sambio, Okavangoland, South West Africa, *South African archaeological Bulletin* 29: 83-88; Shackley, M. 1986. A macrolithic factory site at Massari, Kavango (South west Africa/Namibia): affinities and interpretation, *South African archaeological Bulletin* 41: 69-80.
- [24] Clark, J.D. 1950. *The Stone Age Cultures of northern Rhodesia*, Cape Town.
- [25] Denbow, J. 1984. Prehistoric herders and foragers of the Kalahari: the evidence of 1500 years of interaction, In Schrire, C. ed *Past and present in hunter-gatherer studies*, pp 175-94, Orlando, Academic Press.
- [26] Katankwa, N.M. pers. comm.
- [27] Phillipson, D.W. 1977. *The later prehistory of eastern and southern Africa*, London, Heinemann.
- [28] Remote sensing centre of the United Nations Food and Agriculture Organization, Rome, 1983.
- [29] Huffman, T.N. 1980. Ceramics, Classification and Iron Age entities, *African Studies* 39: 123-174.
- [30] Kinahan, J and Kinahan J.H.A. 1990. Archaeological impact assessment of the Gumare to Sepupa road alignment, Marope Research, Francistown.
-
- [31] A.C. Campbell, in litt. 1992.
- [32] Kinahan, J. & Kinahan, J.H.A. 1984. An archaeological reconnaissance of Bushmanland and southern Kavango, Report to the SWA Government Department of Agriculture and Nature Conservation, Windhoek.
- [33] Yellen, J.E. 1977. *Archaeological approaches to the present: models for reconstructing the past*. New York, Academic Press.
- [34] Brooks, A.S. 1983. San land-