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TRANSVAAL AND NATAL IRON AGE SETTLEMENT REVEALED BY AERIAL PHOTOGRAPHY AND EXCAVATION

R. J. MASON*

INTRODUCTION

In 1820 John Campbell visited a thriving Iron Age settlement built by the Hurutse tribe at that time under the regent Liqueling, and known as Kurrichane or Kaditshwene (spelling uncertain), believed to be near the present town of Zeerust in the S.W. Transvaal, [2], [9], [14] located by J. D. Seddon on air photos, and partially excavated by R. J. Mason in July 1966 and 1967. Campbell estimated the population at approximately 16,000. Barely four years later T. L. Hodgson, then living at Matluassi Mission Station near the present town of Wolmaransstad in the Southern Transvaal, recorded the destruction of a town, probably Kurrichane, in intertribal warfare.[5] We quote from Hodgson's letter:

> *1824 January 23rd*—Visited by a party of Bomananya, a tribe residing five days' journey northwest of us . . . they do not know Kurrechain, but knew Liquelling, the regent of the Marootse nation, whom they state to have been killed by the late invading enemy who destroyed his town . . .

In 1828 Robert Moffat, travelling to the east of Kurrichane, described remains of innumerable, recently destroyed settlements similar to Kurrichane.[12] Moffat's record was the start of Iron Age research in the Transvaal.[9] Most, or all, of the Iron Age structures discussed in the present paper probably predate the tribal wars of the 1820's. My subject in the present paper is confined to Iron Age structures. Other aspects of the Iron Age are to be discussed in later papers.

Development of the Transvaal Iron Age Project

The present Iron Age project began to develop in 1950 when I excavated a number of small Iron Age cave sites near Johannesburg. In 1963 at Melville Koppie I began an intensive study of Iron Age settlement concentrating on the lateral clearance of sites with full record of the position and spatial relationship of artefacts as a guide to the activity that produced them together with C_{14} dating and ethnographic study. Since then we have developed the Iron Age project with larger scale excavations and topographic surveys at Phalaborwa, Klipriviersberg, Matluassi, Waterval, Kaditshwene and Olifantspoort. The present paper is intended to summarize work done to date.

Throughout the work we have sought to find behavioural evidence in terms of material artefacts and their spatial disposition on sites, associated foodwaste and topographic location of living sites. Pilot surveys among living people associated with the sites have been made in the Soutpansberg and Zeerust areas.

The excavation programme was coordinated with settlement analysis on aerial photographs. In 1964, I made a count of Iron Age settlements on air photos covering 1,211 square miles of the Transvaal.[11] Mr Seddon subsequently analysed the distribution of Iron Age settlements in terms of my 1964 criterion, a contiguous walling system (see J. D. Seddon, p. 189 of this issue). In 1967, I discarded this criterion and, with the assistance of a team of six students, analysed

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Iron Age settlements on air photos covering 47,733 square miles of Southern Transvaal-Northern Natal in terms of five classes defined on a basis of plan-form (fig. 1 and fig. 2). Iron Age settlement distribution was plotted relative to present settlement distribution (see figs. 3 and 5).

I consider that settlement plan-form is a direct function of social organization, and that one of the keys to the understanding of Iron Age social behaviour is the plan-form of settlements. The division of each settlement into areas for industrial or social activity is directly reflected in the settlement plans depicted in fig. 2, rather than a hypothetical division of major and minor areas. We now have counts of settlements in each class in different areas over the region 26°-31°E. and 25°-27°S.

Air-photo Analysis of Iron Age Settlement

The basis of classification emerged from study of range of variation in plan-forms on the photographs. We found that a total of 6,237 structures which we attributed to the Iron Age in the area, could be reduced to variants within the following five main classes:

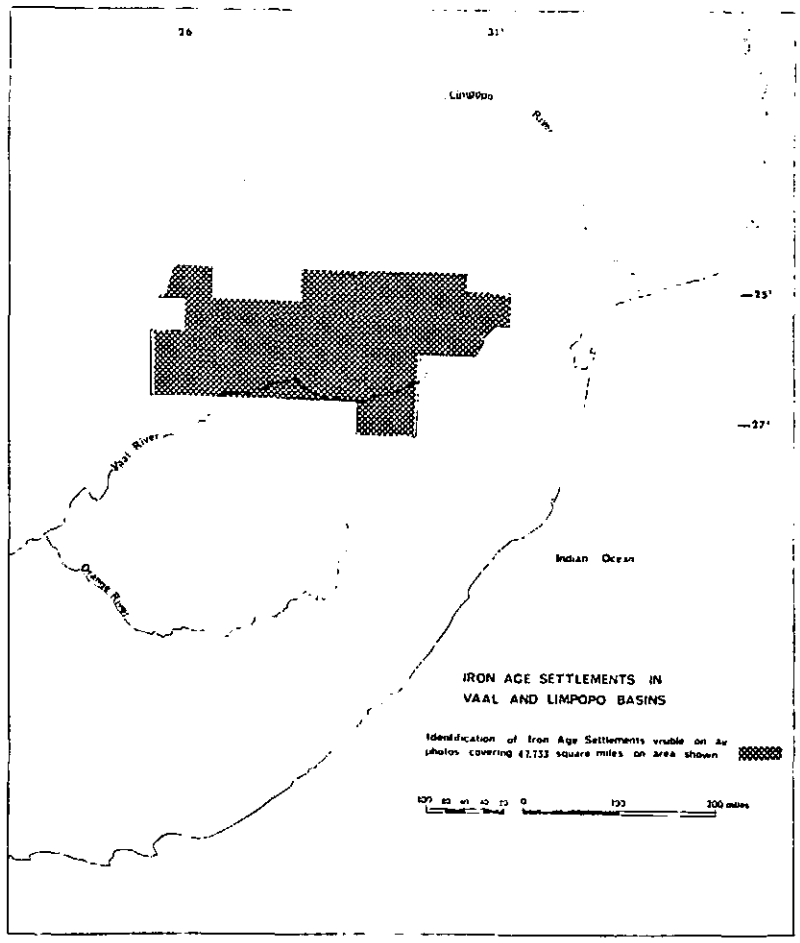
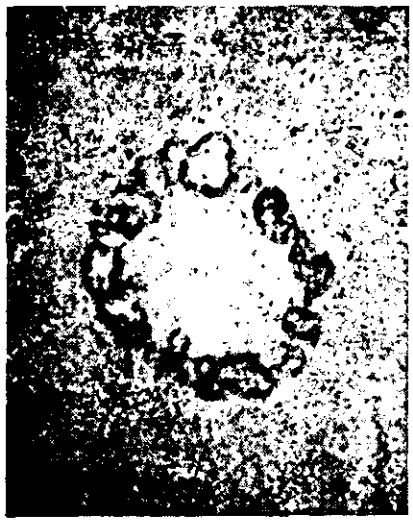


Fig. 1 Air-photo analysis.

Class 4b Structure Flight 369 No. 7684. Lobatsi Dist., Botswana.



Class 2 Structure Flight 406 No. 6611. Koster Dist., W. Tvl.

Class 1 Structure Flight 380 No. 8162. Zeerust Dist., W. Tvl.

Class 4a Structure Flight 369. No. 3225. Zeerust. W. Tvl.

Class 3 Structure AOC 12364 2:9:49 Klipriviersberg, S. Tvl.

Fig. 2. Air photos of Structure Classes for Transvaal and Natal Iron Age settlement revealed by aerial photography and excavation by R. J. Mason.

Definition of Transvaal Iron Age Structure Classes, see Fig. 2

Class 1 Isolated circle or a few adjacent but isolated circles.

Class 2*a* Adjacent circles forming large circular enclosing wall. Blank space in middle.

Class 2*b* Two or more adjacent large circles composed of interlocking small circles.

Class 3 Clear enclosing wall and inner circles.

Class 4*a* No enclosing wall; scattered circles forming a closely related whole.

Class 4*b* No enclosing wall; closely related circular structures covering a large area.

Class 4*c* A dispersed set of isolated circles seeming to form a related whole.

Class 5 Scattered irregular walls—no definite plan identified.

Owing to difficulty of definition, no specific count of slope terracing could be made.

The new experimental classification therefore proceeds from Class 1, as the smallest and simplest class or structure, to Class 4, as the largest and most complex. Classes 2 and 4 are subdivided in terms of the relative size of area occupied by the structures.

The classification of stone structures is subject to the same causes of error as other archaeological artefact classification. We attempted to reduce error in the present classification by combining the different perceptual capacities of seven different workers. Discussion between these seven workers, as the analysis proceeded, combined to yield the following count:

Distribution of Iron Age settlements in Western, Southern and Eastern Transvaal, and Northern Natal. 47,733 sq. miles 25°-27° S. and 26°-31°E.

COUNTS ARE ESTIMATES ONLY SUBJECT TO ERROR NOTED IN TEXT

Area Drainage	Class 1	Class 2a	Class 2b	Class 3	Class 4a	Class 4b	Class 4c	Class 5	Total
1. Marico .. .. Hex .. .. .. Crocodile .. .. Elands..	338	116	2	558	110	10	2	18	1154
2. Sand .. .. .. Pienaar .. .. Elands..	24	5	—	92	4	—	—	—	125
3. Steelpoort .. .. Sabi .. .. .. Crocodile .. .. Komati	392	14	—	1335	44	—	7	—	1792
4. Skoonspruit ..	10	2	—	36	27	10	—	3	88
5. Klipdrif .. .. Mooi	163	6	—	324	74	—	—	—	567
6. Suikerbos	212	8	—	525	49	—	—	—	794
7. Eastern Vaal .. Waterval	381	117	2	66	16	1	—	2	585
8. Olifants	184	27	—	5	4	—	—	—	220
9. Klip River .. .. Natal	477	251	—	46	49	—	—	—	823
Scattered Areas..	58	4	—	21	5	—	1	—	89
	2239	550	4	3308	382	21	10	23	Total 6237

Total structures show the following occurrence:

Most common Class 3—clear enclosing wall and inner circles.

Least common Class 2*b*—two or more adjacent large circles composed of interlocking small circles.

Classification of Occupation Areas within or adjacent to Structure Classes 1-5

Field studies of Iron Age structures and occupation sites suggest the following classification of occupation areas within structures. The classification is tentative and remains to be confirmed or modified in future work.

Cave settlements either *domestic* (e.g. Gatsrand Caves, Uitkomst Cave surface or Bed 4), or *industrial* caves used as smelting centres, e.g. cave at confluence of Blaaubank and Jukskei R., Uitkomst Cave Beds 2 and 3.

Open settlements. Here stone walls demarcate:

1. *Industrial areas* Furnace behind semicircular wind-screen on edge of Melville Koppie Class 3 structure. Furnaces in large enclosure at Olifantspoort, Masekwapoort. Furnace behind semicircular wind-screen at Shankare.
2. *Cattle pens* large (see Klipriviersberg, fig. 6). No direct evidence—inference from early historic accounts, e.g. Casalis[3] p. 123.
3. *Cattle pens or small livestock pens* (see Klipriviersberg, fig. 6); interpreted on basis of pens I observed at Himba settlements on the Kunene River. Note three structures consisting of larger enclosure, smaller enclosure and 'tail'.
4. *Men's eating places* Klipriviersberg stone hut and granary base, fig. 6, Kurrichane, a larger version of stone wall and granary base excavated in 1966.

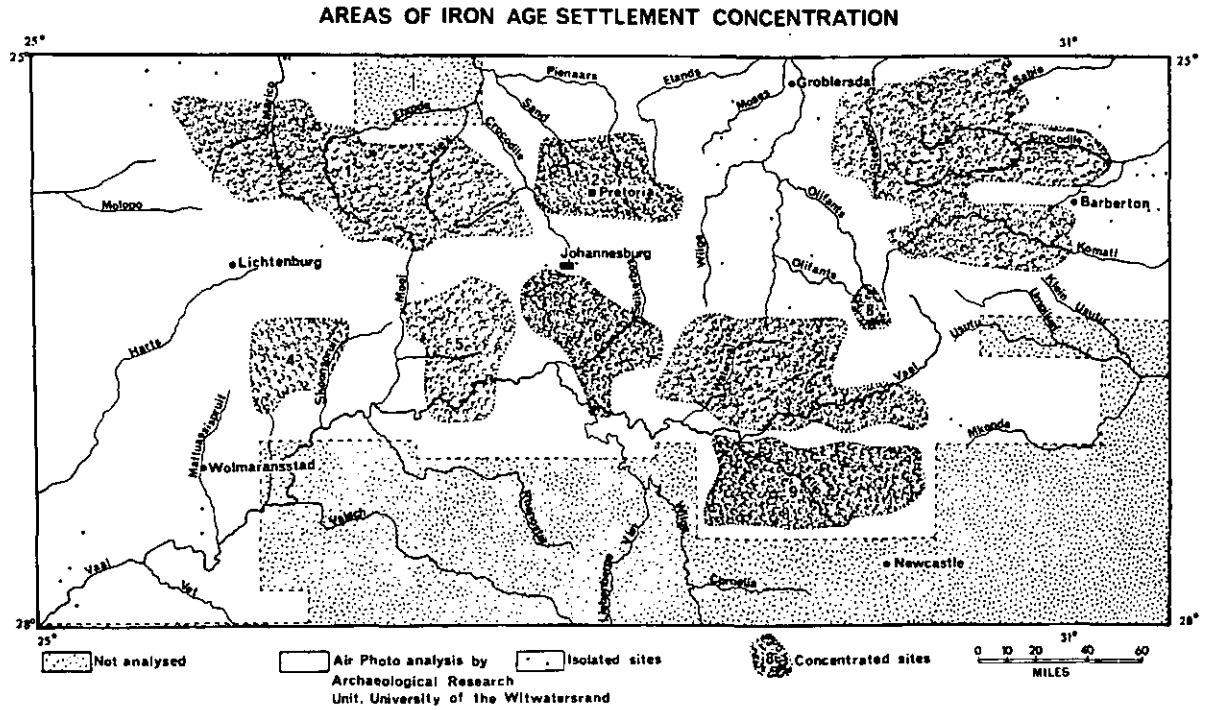


Fig. 4 Areas of Iron Age settlement concentration.

5. *Stone enclosure between clay huts and outer enclosing walls* Class 3 structure Klipriviersberg. Probably domestic enclosure for occupants or adjacent unit, demarcated from domestic area of neighbouring hut (fig. 6.)
6. *Small stone huts* probably roofless, for occupation by herd boys guarding entrance to cattle pens? (See Klipriviersberg, fig. 6). *Small corbelled stone huts* as at Klipriviersberg.
7. *Small low stone structures*
   Circular cooking areas paved (Kaditshwene 1966)
   Paved fireplace and semicircular windscreen anchor (Klipriviersberg, fig. 6).

Topographic Distribution of Iron Age Settlements

The present paper refers mainly to Iron Age settlements in open country. The reader should note that Iron Age settlers made extensive use of caves as well.[9] The count of 6,237 settlements made in the present study is probably far below the actual number of settlements on the ground, and is also subject to measurable variation in perceptual differences between the workers

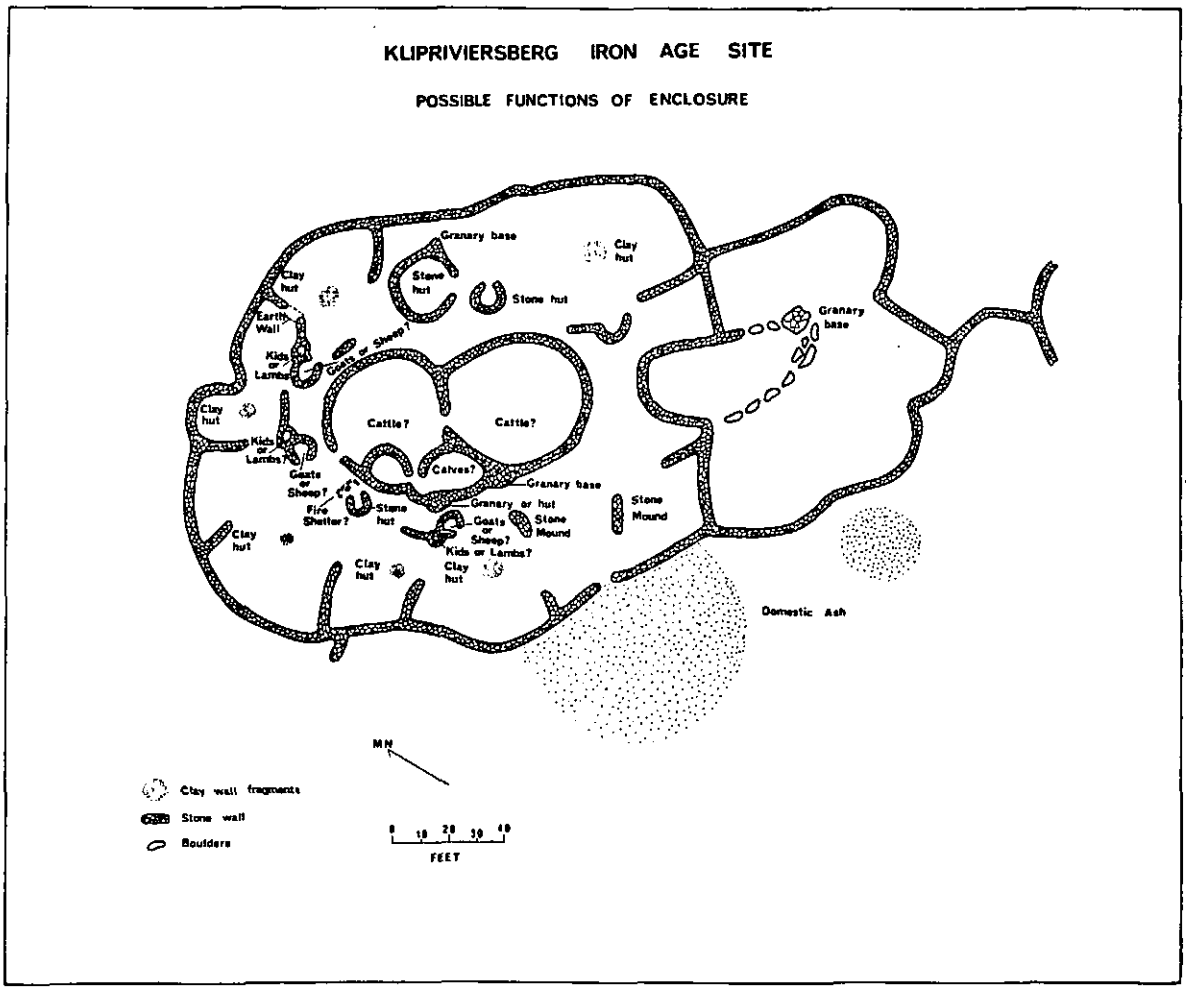


Fig. 6 Functional interpretation of Class 3 structure excavated at Klipriviersberg.

who made the count, as indicated by the Klipriviersberg test (below). The differences in class proportions shown in the table (p. 3) are probably valid in a general sense, however, although the total counts will certainly be modified in future work. In earlier studies[11] I noted the tendency for Iron Age settlers to build on high ground, the slopes or summits of hills or koppies. The main point emerging from the present survey is the concentration of settlements in the drainage areas of major rivers or streams (fig. 4). The table lists nine areas of Iron Age settlement concentration, eight in the Transvaal and one in northern Natal. More detailed work would probably define a greater number of minor areas of Iron Age concentration. It seems clear that Iron Age settlers avoided extensive grasslands such as the grasslands of the western Karoo Highveld[9] on the Lichtenburg Plain, possibly because of the rarity of surface streams and low relief which denied water and natural topographic protection to settlers in such territory. The distribution of Iron Age settlements in the nine areas provides a basis for planning the University of the Witwatersrand Iron Age project. Future excavations will be planned to detect similarities and differences in Iron Age behaviour in the nine areas.

Cattle and Iron Age Settlement Patterns

Part of the cause of historically recorded endemic conflict between Transvaal Iron Age settlements was probably cattle. The need to water cattle probably accounts for the concentration of Iron Age settlements in the drainage areas of major streams in the Vaal and Limpopo Basins. A. Leeds and A. Vayda provide a useful summary of relationships between cattle and social conflict in subsistence level economies.[7]

Problems of Iron Age Structure Classification on aerial Photographs

The classification of Iron Age stone structures like other artefact-classification is subject to a margin of error due to the variability of plan-form which necessarily forms the basis of the vertical or slightly oblique view of such structures as depicted on air photos. As noted, the classification of the 6,237 structures in five main classes observed in the Transvaal and northern Natal (25°-27°S., 26°-31°E.) represents to a large extent a consensus of opinion by seven workers, working simultaneously on adjacent aerial photographs and classifying individual structures after discussion. While it was not possible to discuss in detail the classification of every single structure, intermittent but persistent discussion led to a consensus of differing perceptual capacities. In order to test the effects of isolation on classification, the seven different workers studied the same aerial photograph (Aircraft Operating Company photo of Klipriviersberg area south of Johannesburg, included site fig. 6 excavated by University of Witwatersrand Archaeology class 1965-66). The photo was chosen because of the exceptional complexity of Iron Age structures visible on it.

Test classification by workers, trained as a team, working in isolation on same air photo of Iron Age structures on Klipriviersberg

Worker	*Class 1*	*Class 3*	*Class 4a*
1	27	62	2
2	29	51	2
3	23	50	—
4	17	52	1
5	12	30	2
6	13	44	1
7	16	44	3

Wide variation in individual counts is apparent, from 30 to 62 for Class 3, from 12 to 29 for Class 1, and from 0 to 3 for Class 4*a*. On the other hand, all seven workers identified Classes 1, 3 and 4*a* with exception of one worker who did not identify Class 4*a*. Within the wide range of variation in classification

by individual workers, there is a certain measure of agreement.

Class 1 Four of the seven workers counted between 12 and 17, the remaining three between 23 and 27.

Class 3 Two of the seven workers achieved the same count of 44 structures, three workers counted between 50 and 52 structures, counts by the remaining two workers ranging from 30 to 62.

Class 4a Here the greatest degree of agreement was reached: Two workers counted 2 each, three workers counted 2, and one worker counted 3.

The widest disagreement was in Class 3 structure counts. A Class 3 structure is represented by a clear enclosing wall and inner circles. Reference to fig. 2, showing part of the actual photograph used in the test, will demonstrate the reason for the wide disagreement in count of Class 3, since adjacent enclosing walls and their inner circles are very frequently in actual contact with one another. The worker who counted the highest number of Class 3 structures based the count on single enclosing walls with inner circles, while the worker who achieved the lowest Class 3 count of 30 structures merged adjacent enclosing walls in the count.

Development of numerical taxonomic or matrix analysis may reduce the margin error demonstrated by the test classification of the Klipriviersberg structures. In the interim, the Klipriviersberg classification should be used as a measure of variability in the reader's assessment of the counts set out in the total classification of 6,237 structures noted in the present paper.

Workers' Comments on Iron Age Structure Classification

No satisfactory method for the classification of terracing could be established. Classification in terms of areas enclosed by terracing is suggested.

Class 3 (enclosing wall with inner circles) occasionally joined to one another, presenting difficulty in counting.

Classes 4*a* and 4*b* were divided in terms of a size classification. The lack of specific difference led to confusion by different workers on different photographs depicting this class.

Since Class 4 has no boundary wall, and was frequently widely dispersed, it was uncertain where the periphery lay, and separate sites in this class may have been included in a count of one in the class.

Class 5 included structures of uncertain classification. Whether or not a particular structure was uncertain in classification depended on the opinion of the individual worker.

Natural features such as soil marks, desiccated pans, and concentric vegetation growth often simulated stone wall structures.

Air-photo Iron Age Structure Count compared with Ground Survey Structure Count

An aerial photo count of structures probably represents a figure substantially less than the actual occurrence of structures because of coverage by bush or other vegetation. Our detailed knowledge of Iron Age stone structures visible on the ground at various sites in Johannesburg and the Magaliesberg proved that many Iron Age structures are not visible on air photos. For example flight plan 406, photo No. 9376 (Moedwil farm west of Rustenburg) shows a dense plant cover approximately ¾ mile in length and ½ mile in width. Our traverse of this area revealed a large Class 4*a* structure entirely invisible on the air photo. There can be little doubt that the stone structures on this spot encouraged plant growth which has now almost entirely obliterated them.

I traversed extensive Iron Age structures on the summits of the Matluassi Hills near

Matluassi Mission. These are entirely obscured by vegetation on the air photos.

Many Iron Age sites are represented by overgrown entrenchments on the grassland between Witbank and Carolina. These are not visible on the air photos.

Comparative Study of Iron Age and Present-day African Settlement. Possible combination of wood and stone in Iron Age structures.

The range of variation in height of stone walls at Iron Age structures examined on the ground in the Johannesburg area, at Melville, Waterval and Bedfordview, and at Olifantspoort (Rustenburg district) is between approximately 18 inches and 9 feet. The Waterval, Melville and Bedfordview structures are barely 18 inches in height and there is no evidence to show that the walls were originally higher. While no direct evidence could be found, it is possible that the stone walls at these sites served merely to anchor stockades or withy-fences. Though widely separated in space and time from these Johannesburg area localities, I observed a combination of a wooden stockade superstructure anchored in stone wall foundations at three sites in the Soutpansberg (northern Transvaal), at Magongoza's Kraal, Masekwapoort (both probably 19th century sites) and at the present Venda chief's village at Mukumbani (Sibasa district) ('South African Iron Age and Present-day Venda Architecture and Pottery', p. 15 of this issue). Comparative study of Iron Age and present-day African settlement, begun in 1964, is to be extended.

Functional Interpretation of Morphological Classification

Terminal Iron Age societies in the Transvaal described by early explorers such as J. Campbell, were torn by inter-settlement conflict over cattle and other possessions. One major functional reason for Iron Age structure design and site selection may have been defence against sudden attack. Defence appears to have depended upon sufficient warning for counter-attack, not upon prolonged siege. Reference to the structure count totals (p. 169) shows that Class 3 comprises 3308 of the 6237 Iron Age structures counted. Class 3 structures comprise a clear enclosing wall with inner circular structures. Class 3 structures usually occur in small groups substantially smaller than the largest groups, those in Class 4. The Class 3 enclosing walls probably functioned partly as defensive walls, as well as walls for containing livestock and perhaps small children. Class 4 structures lack enclosing walls, the defensive or retaining function of enclosing walls being replaced by the mere size of the settlement complex as a whole.

As noted, since 1963 we have made detailed excavations at Iron Age sites, represented by settlements in open country as distinct from Iron Age cave sites, at the following localities: Klipriviersberg, Melville, Waterval, Kurrichane (in the southern or western Transvaal). In addition, we have excavated open localities at Nareng and Shankare in the Phalaborwa area. Excluding the latter, we find limited historical evidence concerning the function of Class 3 and Class 4 structures. J. Campbell's 1820 account of 'Kurrichane' (Kaditshwene) [2] indicated the social and political function of a Class 4 structure, and revealed that a certain amount of industrial activity in the form of metal production took place at such sites. Class 4 structures could house up to 16,000 inhabitants, if J. Campbell's estimate of the Kurrichane population is correct. My detailed excavation of a Class 3 structure at Klipriviersberg revealed the remains of clay-walled huts approximately 10 feet in diameter, spaced at regular intervals of 30 feet, the whole resembling the illustration of a Rolong village by E. Casalis ([3]p. 123). The excavation of much of the Klipriviersberg Class 3 structure suggested that its functions were confined to social activity, protection of domestic

animals, and storage of domestic grain (fig. 6). I discovered grains of *Sorghum* sp. in the ash heap at this site. A well-preserved furnace and metal smelting enclosure was uncovered at the north-west corner of a Class 3 stone structure on the north pediment of Melville Koppie. A more complete functional analysis of Iron Age stone structures is to be published at a later date when site excavation reports will be presented. The evidence suggests a wide range of variation in the actual function of the structures. I have given a general account of the possible relationship between structure and function in the Transvaal Iron Age.[9] J. D. Seddon presents a theoretical discussion of Iron Age structure function in his article 'An Aerial Survey of Settlement and Living Patterns in the Transvaal Iron Age', p. 189 of this issue.

Distribution of Similar Structures in Africa

Structures similar to some of those visible between 25°-27°S. and 26°-31°E. appear to occur sporadically throughout the less forested parts of Africa south of approximately 15°N. 3°W. in the north-west, and 2°S. 8°E. in the north-east. Henry Barth's plan of the chief's house at Aribinda, encountered between Sokoto and Timbuktu, resembles a Transvaal Class 2*a* structure ([1] p. 242), while Mary Leakey's Hyrax Hill plans resemble Class 1 structures.[6]

Dating of Stone Structures 25°-27°S., 26°-31°E.

The reader should note causes of error in C_{14} age estimations given by M. Stuiver and H. Suess.[16] The earliest radiocarbon date for Iron Age artefacts in the area 25°-27°S. and 26°-31°E., under discussion in this paper, is A.D. 1060 ± 50 (Y-1338). This date refers to a metal smelting furnace of two-aperture type, including stamped pottery, but not including stone walls. An identical piece of pottery, about one-third of a bowl rim, was found within a complex Class 1 structure about 300 yards north-west of the A.D. 1060 furnace, and a smaller Class 1 structure lies about 20 yards to the south of the A.D. 1060 furnace. The earliest date directly relative to a stone wall is A.D. 1650 ± 80 (Y-1323B) at Uitkomst Cave. The earliest dated complex Class 1 structure is at Waterval, A.D. 1720 ± 40 (GrN-4797). The earliest dated Class 3 structure is at Klipriviersberg, A.D. 1755 ± 45 (GrN-4926). These dates, limited and open to a wide margin of error as they are, suggest a generally second millennium date for the stone structures under discussion in the present paper. This statement is no more than a guess, however, and no chronometric dating hypothesis may be regarded as firmly established on less than 100 measurements. Early dates for stone structures in Africa may be expected consequent on the dating of the East African Engaruka hillside structures from A.D. 330 ± 90 (GX-0348) onwards given by H. Sassoon.[13] Some recently completed radiocarbon age estimations for sites relevant to the present discussion are given in the table, pages 10 and 11.

The Culture Area Concept and Areas of Iron Age Settlement Concentration

In 1952[8] I applied the culture area concept to Iron Age settlement in the Southern Transvaal and Orange Free State, extending it to Western Transvaal in 1962.[9] J. D. Seddon's application of the territorial imperative to Iron Age studies relates the culture area concept to studies of animal behaviour. The nine areas of settlement concentration delineated by the present aerial photo analysis may be explained as expressions of distinct Iron Age behaviour linked with the environmental variation from area to area, or merely as distinct behavioural developments due to relative geographical isolation. Large scale total analyses of artefacts, settlement layout, foodwaste and settlement ecology, already commenced, may

TRANSVAAL IRON AGE DATES—APRIL 1967—
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Subject to error stated by M. Stuiver and H. Suess.[16]

Site	Lat.	Long.	Locality or structure class	C_{14} Date	Lab. No.	Comment
Klipriviersberg (just south of Johannesburg)	26°11′S.	28°02′E.	From 60 cm depth in ash heap adjacent to Class 3 Iron Age Structure Position Db/Ea/11.	A.D. 1845 ± 50.	GrN-4796	Archaeologically similar to GrN-4926 and GrN-4927. Date suggests contamination. With stamped pottery of Uitkomst style.
			Charcoal in collapsed clay wall of hut 210/E(i) depth ± 10 cm. Class 3 Iron Age structure.	A.D. 1755 ± 45	GrN-4926	Probably same occupation as GrN-4927. With stamped pottery of Uitkomst style.
			Ash layer on floor of stone hut 220/f depth 10-15 cm. Lower habitation layer.	A.D. 1770 ± 50	GrN-4927	Probably same occupation as GrN-4926. With stamped pottery of Uitkomst style.
Melville (Johannesburg suburb)	26°20′S.	28°E.	Furnace. Iron Age 1 12" depth.	A.D. 1060 ± 50	Y-1338	Not known if this date represents contamination by early carbon. This regarded as unlikely. With stamped pottery of Uitkomst style.
			Furnace on edge of Class 3 structure.	A.D. 1860 ± 60	Y-1768	Furnace and pottery similar to Y-1338. Recent date suggests contamination although charcoal was collected on base of furnace bowl. Completely sealed from present surface. With Uitkomst style stamped pottery.
Uitkomst Cave	25°55′S.	27°45′E.	Furnace Bed 3. Behind stone wall at mouth of cave.	A.D. 1650 ± 80	Y-1323B	Possibly acceptable date. With stamped pottery of Uitkomst style.
Waterval (Johannesburg suburb Corriemoor - Northcliff)	26°09′S.	27°56′E.	TU 15. grid ref. Charcoal on floor about 10 cm below surface adjacent to stone wall of complex Class 1 structure.	A.D. 1720 ± 40	GrN-4797	Possibly acceptable date. With stamped pottery of Uitkomst style.
Shankare (Phalaborwa)	23°55′S.	31°10′E.	Charcoal from floor around base of anvil next to furnace behind stone wind break.	A.D. 1660 ± 80	Y-1766	Charcoal was mixed with iron chips from artefact making on stone anvil. Possibility of contamination unknown. Y-1766 is part of a large Iron Age settlement of unknown duration. With incised pottery of Makapan style.

						duration. With incised pottery of Makapan style.
Shankare (Phalaborwa)	23°55′S.	31°10′E.	Charcoal from domestic refuse on terrace on north slope of Shankare behind retaining wall of stones.	A.D. 1860 ± 60	Y-1769	Date suggests contamination although immense mass of domestic refuse on pediment of Shankare indicates Iron Age settlement of long duration. Date of A.D. 1860 ± 60 may therefore represent terminal Iron Age occupation in this area. With incised pottery of Makapan style.
Shankare (Phalaborwa)	23°55′S.	31°10′E.	Charcoal from floor of 3-aperture furnace grid ref. N/15 D4-7/-.2′-.4′ .Charcoal was sealed ± 12 cm below present surface. On north pediment of Shankare.	A.D. 1956 ± 1	GrN-4929	Date suggests contamination by recent carbon. GrN-4929 furnace is identical to GrN-4928 furnace. With incised pottery of Makapan style.
Nareng (Phalaborwa)	23°55′S.	31°10′E.	Charcoal on floor adjacent to furnace, dating to operation of furnace, 30 cm below present surface. Furnace of 3-aperture type identical to GrN-4929.	A.D. 1840 ± 25 A.D. 1790 ± 60	GrN-4928 Y-1767	Note overlap with C_{14} date by Yale Laboratory Y-1767. Both dates refer to same charcoal sample from isolated smelting site on north pediment of Nareng—a small koppie east of Phalaborwa. With incised pottery of Makapan style.

reveal the nature and inter-relationships of regional Iron Age developments. The problem may be complex due to successive or overlapping occupation within the same region. At least three distinct Iron Age occupations are registered in the stratification of the Klipriviersberg structure. Iron Age settlers appear to have had no qualms about reuse of abandoned stone wallings. Some Iron Age caves, such as Uitkomst, preserve evidence of separate Iron Age occupations. The early historic destructive traverse of Transvaal Iron Age settlements by Mzilikazi may not have been the first conquest to link isolated settlement areas under an ephemeral overlay of uniformity.

Analyses of Iron Age Foodwaste

In 1937 L. Fouché published the first analysis of Transvaal Iron Age foodwaste from Mapungubwe. In 1951 I published the first analysis of Iron Age foodwaste from Southern Transvaal cave sites. C. K. Brain is now making more extensive studies of foodwaste produced by excavations at Klipriviersberg and 'Kurrichane' (Kaditshwene), and has so far identified domesticated goats, sheep, cattle and a range of undomesticated animals. Regrettably, most foodwaste is confined to bone. Plant food remains are limited to 3 seeds of *Sorghum* sp. I recovered at Klipriviersberg.

Attribution of Settlements

The following evidence indicates Bantu as makers of stone structures:

All artefacts found at excavation are similar to those still made by Bantu, or historically attributable to them.

No exotic non-Bantu artefacts occur at Transvaal sites except beads or porcelain.

Though rare, hominid skeletal material at Iron Age sites is negroid, with the exception of Mapungubwe, where skeleton material is Bush Boskop, and artefacts, pottery and arrow heads are different from most Iron Age assemblages.

Iron Age Settlement Patterns and Bantu Settlement Today

Bantu settlement in the Transvaal today is being rapidly changed in terms of agricultural planning policy, but air-photo study and field research shows that:

Venda tribesmen today still build stone structures for their chiefs at Tshivhase and Tshimbupfe similar to the Iron Age walled structures found in the Soutpansberg and Phalaborwa.

The present-day Bantu homesteads in the Northern and Eastern Transvaal are built around a unit of two or three cone and cylinder huts on the edge of an area enclosed by a clay or thorn bush wall. I have detected such settlements overlapping underlying Iron Age structures.[11] Within the Klipriviersberg stone walls I discovered remains of clay-walled huts C_{14} dated to *c.* A.D. 1750, probably similar to present-day Bantu huts.

In flights over Bantu settlement units in the Eastern Transvaal I noted farmlands up to approximately fifty acres enclosed by thorn scrub fencing or hedges. There is no trace of the latter in the archaeological context, but the present-day concept of a few huts related structurally to an enclosed living area probably descends from the Iron Age concept, where the huts were actually enclosed within the living area. The change to the present-day concept probably reflects greater security from external attack. B. Sansom suggested to me that greater competitiveness within the community accounts for the dispersal of much of the Sekukuniland Pedi into small units of a few huts adjacent to an enclosed living area.

While stone walled settlements of Iron Age style were occupied till 1881 at Mapogstad,[9] in other areas wooden stockades replaced stone walls early in the 19th century. A. P. Borcherd, who visited New Littakoo (Lithakong), a wood and clay hut settlement including wooden stockades, near Kuruman in 1801, noted that ruins of Old Littakoo were

in stone. The Batlapin of New Littakoo did not know who had built the stone walls of Old Littakoo.

Conclusion

The 6,237 structures identified in our 1967 analysis probably represent only a part of the total Iron Age settlements in the area. Estimates of the dating range of settlement must await extensive radiocarbon measurement. Very few sites suggest prolonged occupation of the same site by different generations, the maximum recorded depth of refuse being less than 6 feet as determined at Kurrichane (Kaditshwene) in 1966. Some settlements were re-occupied after a substantial lapse of time. At Klipriviersberg I recorded at least three separate occupations. Borcherd's observation at Littakoo (Lithakong) indicates that Iron Age communities building in wood occupied areas formerly the territory of Iron Age people building in stone. We conclude that the Transvaal Iron Age represents an exceptionally complex stage in the transition from Stone Age to present-day society. Future work will be directed to large scale excavation of the localities indicated.

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REFERENCES

1. BARTH, H. *Travels and Discoveries in North and Central Africa*, London, 1890, Vol. 2.
2. CAMPBELL, J. *Travels in South Africa*, London, 1822, Vol. 1.
3. CASALIS, E. *The Basutos or Twenty-three Years in South Africa*, Cape Town, 1965. (C. Struik reprint)
4. CLARKE, D. L. Matrix Analysis and Archaeology with particular reference to the British Beaker Pottery, *Atti del VI Congresso Internazionale delle Scienze Preistoriche e Protostoriche*, Vol. II, 37-42, 1965.
5. HODGSON, T. L. *Letters to the Wesleyan Missionary Society London* No. 26 from Matluassi 12.1.1824. Not yet published.
6. LEAKEY, M. D. and L. S. B. Report on the excavations at Hyrax Hill, Nakuru, Kenya Colony, *Trans Roy. Soc. S. Afr.* 30:271-409, 1945.

7. LEEDS, A. and VAYDA, A. Man, culture and animals, *Amer. Assn. Adv. Sci.* 78: 1965.
8. MASON, R. J. South African Iron Age pottery from the Southern Transvaal, *S. Afr. Archaeol. Bull.* 26(7) 70-79, 1952.
9. MASON, R. J. *Prehistory of the Transvaal*, Johannesburg, 1962.
10. MASON, R. J. The Prehistoric People of Melville Koppies, *Melville Koppies Nature Reserve Guide Book*, Part 2, Johannesburg, 1963.
11. MASON, R. J. The Origin of South African Society, *S. Afr. J. Sci.* 61 (7) 255-267, 1965.
12. MOFFAT, R. *Matabele Journals of Robert Moffat 1829-60*, London, 1945.
13. SASSOON, H. Engaruka: Excavations during 1964, *Azania* I: 79-100, 1966.
14. SEDDON, J. D. Kurrichane: A Late Iron Age Site in the Western Transvaal, *Afr. Stud.* 25: 227-231, 1966.
15. SMITH, A. *The Diary of Dr Andrew Smith 1834-36*, ed. P. Kirby, Cape Town, 1940, Vol. II (Van Riebeeck Society 21).
16. STUIVER, M. and SUESS, H. E. On the relationship between radiocarbon dates and true sample ages, *Radiocarbon* 8: 534-540, 1966.

SOUTH AFRICAN IRON AGE AND PRESENT-DAY VENDA ARCHITECTURE AND POTTERY FROM THE NORTHERN TRANSVAAL, SOUTH AFRICA

R. J. MASON

The products of some present-day Transvaal tribes may be related to the archaeological record in or near their present places of settlement. Numerous ethnographers have reported products of Venda activity which resemble prehistoric remains in the same or adjacent territory. Before 1930, H. A. Stayt noticed erect stones in Venda walls and compared these with Rhodesian Iron Age features (Stayt 1931); G. Gardner published a plan of a hut, carved door and surrounding stockade, excavated by him on Mapungubwe hilltop, dated to A.D. 1380 ± 60, which resembles present-day Venda structures in some respects (Gardner 1963). In 1931 P. Kirby visited Chief Tshivhase's capital at Mukumbani in central Vendaland and saw the building of a massive stone structure to celebrate the accession of a new chief, and also reported wooden stockades at the site (Kirby 1956).

In 1963 I initiated a new Iron Age programme in the Transvaal, now part of the African Studies Programme of the University of the Witwatersrand, Johannesburg. Excavations of Iron Age localities have now been made at three sites on the Witwatersrand, one near Zeerust and two at Phalaborwa. Preliminary ethnographic studies related to the Phalaborwa remains were made in the Soutpansberg, Northern Transvaal, in or on the fringe of traditional Venda settlements.

In 1962 and 1964 I visited two stone-walled settlements in the Waterpoort and Masekwapoort districts, central and western Soutpansberg respectively, under the guidance of Mr P. J. Uys, a keen amateur archaeologist. On the basis of local tradition, Mr Uys attributes both settlements to late nineteenth century Venda builders. The settlements cover a few acres on steep mountain slopes similar to present-day Venda settlements at Mukumbani and Tshimbupfe. Well-built stone walls demarcate living and working areas at the sites. The former are suggested by hut remains, the latter by smelting furnaces. Remains of wooden stockades inserted into the enclosing stone walls, seen at Masekwapoort, have not been recorded previously at prehistoric sites in South Africa to my knowledge (figs. 1 and 2).

Late in 1964, and again in 1966, I visited Mukumbani and Tshimbupfe in central and southern Vendaland. Here the present chiefs' homes, administrative offices and the homes of their families and tribal offices, are adjacent to deserted remains of their grandfathers' settlements. At both sites the grandfathers' settlements are located on the summits or far up the slope of adjacent hills, indicating a movement down the slope from the paternal, nucleus settlement in relatively recent times. Professor J. Blacking kindly informed me that another reason for settlement movement was the death of a chief. This movement repeats a feature widespread in the Transvaal, where early nineteenth century Iron Age settlements are to be found mainly on hilltops, while the descendants have today occupied valley floors or lower slopes, presumably due to greater security at the present time.

These two chiefs' personal houses at Mukumbani and Tshimbupfe were built in European style, but many of the surrounding walls and stockades, including some I saw under construction in September 1964, closely resemble stone walls and stockade remains at the presumed late nineteenth century sites at Masekwapoort and Waterpoort (figs. 3-7). The wall-building methods in use today at Tshimbupfe and Mukumbani also closely resemble techniques evident at Iron Age stone-walled settlements throughout the Southern Transvaal (Mason 1962). Vertical stones have been erected in some of the walls. At Mukumbani some stones and wooden poles are surmounted by bovid horns (figs. 4-5).

The Mukumbani and Tshimbupfe walls, built during or just before 1964, were intended to separate areas for different activities. Some of the walls retain terraces on steep slopes. Others are speakers' or musicians' podia. Those I saw at Tshimbupfe were built by Venda tribesmen at their chief's request. A team of eight men used European tools for the building of the walls, but followed the techniques evident at the prehistoric sites (fig. 8). Similar stone structures may be seen elsewhere in the Venda Reserves. Chief Ne-Tshimbupfe informed me that most Venda men were capable of building in stone, though some were more expert than others. "Like making porridge", he said.

Venda clay fireplaces, with shallow bowl-like depressions, seen near Tshimbupfe (fig. 9), exactly resemble clay structures we excavated at Shankare Iron Age sites, Phalaborwa, where stone terraces and walls are also to be seen.

Tshimbupfe is also a centre of pottery production. Pottery purchased here in 1964 showed marked resemblances in incised motifs, rim finish, surface finish and form to pottery excavated by us at Iron Age sites at Shankare and Nareng, Phalaborwa, and also in the uppermost bed in the Cave of Hearths at Makapansgat. Figs. 10, 11 illustrate some prehistoric and present-day pottery from these sites.

We may conclude that both present Venda architecture and Venda pottery show close parallels to prehistoric materials in the same or adjacent territories. We propose to investigate these relationships in more detail.

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REFERENCES

GARDNER, G. A. 1963. *Mapungubwe II*, Van Schaik, Pretoria.

KIRBY, P. R. 1956. The building in stone of a new kraal for the paramount chief of the Venda, *S. Afr. J. Sci.* 52(7) 167.

MASON, R. J. 1962. *Prehistory of the Transvaal*, Witwatersrand University Press, Johannesburg.

STAYT, H. 1931. Notes on the Bavenda and their connection with Zimbabwe *Zimbabwe Culture*. Oxford University Press, Oxford.

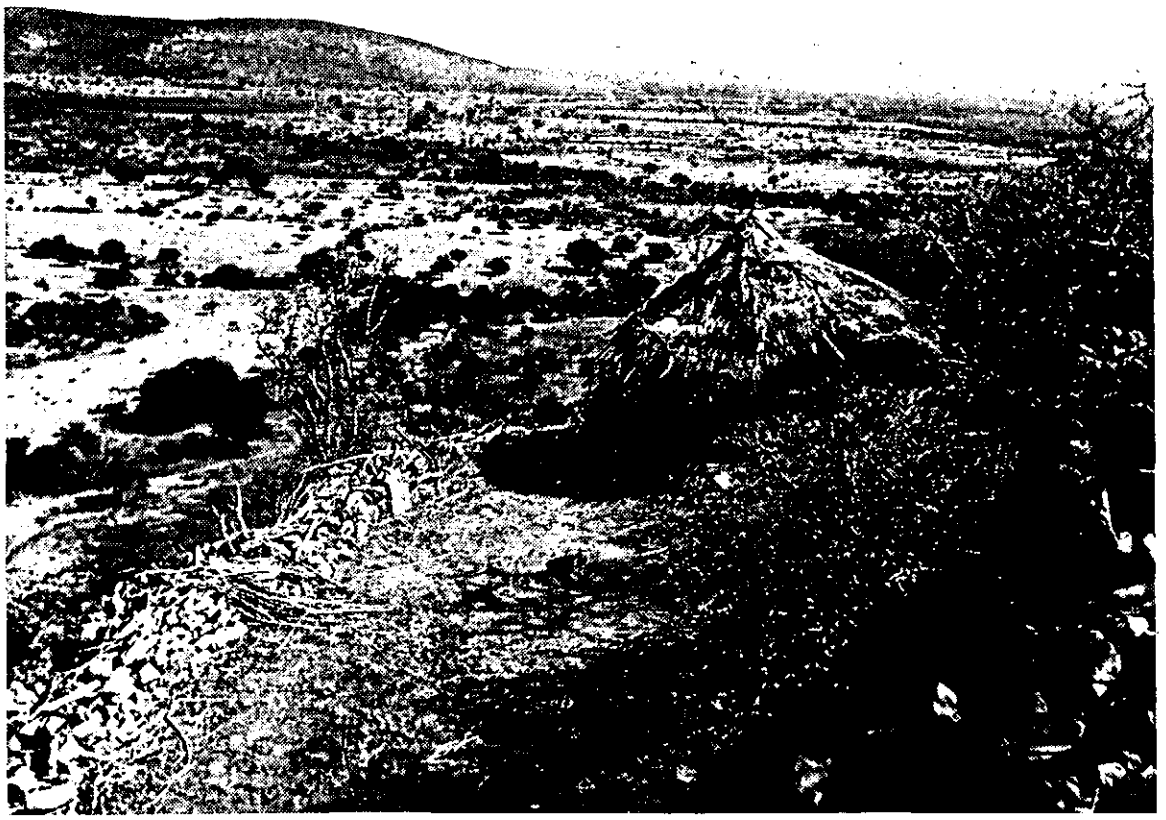

Fig. 1. Masekwapoort. Remains of wooden stockade in late 19th century stone wall enclosing chief's burial hut.

Fig. 2. Masekwapoort. Remains of wooden stockade in late 19th century stone wall.

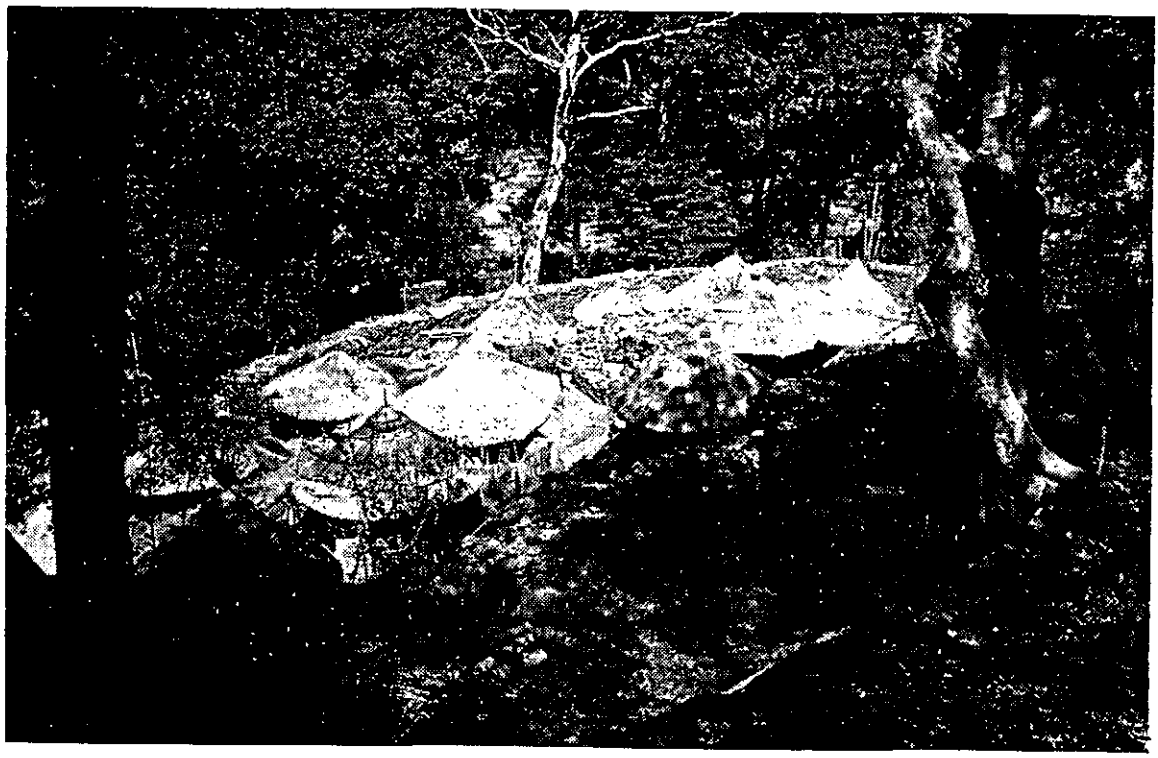

Fig. 3. Mukumbani. Chief's village enclosed by high stone wall.

Fig. 4. Mukumbani. Chief's village with stone wall, erect stones and horns.

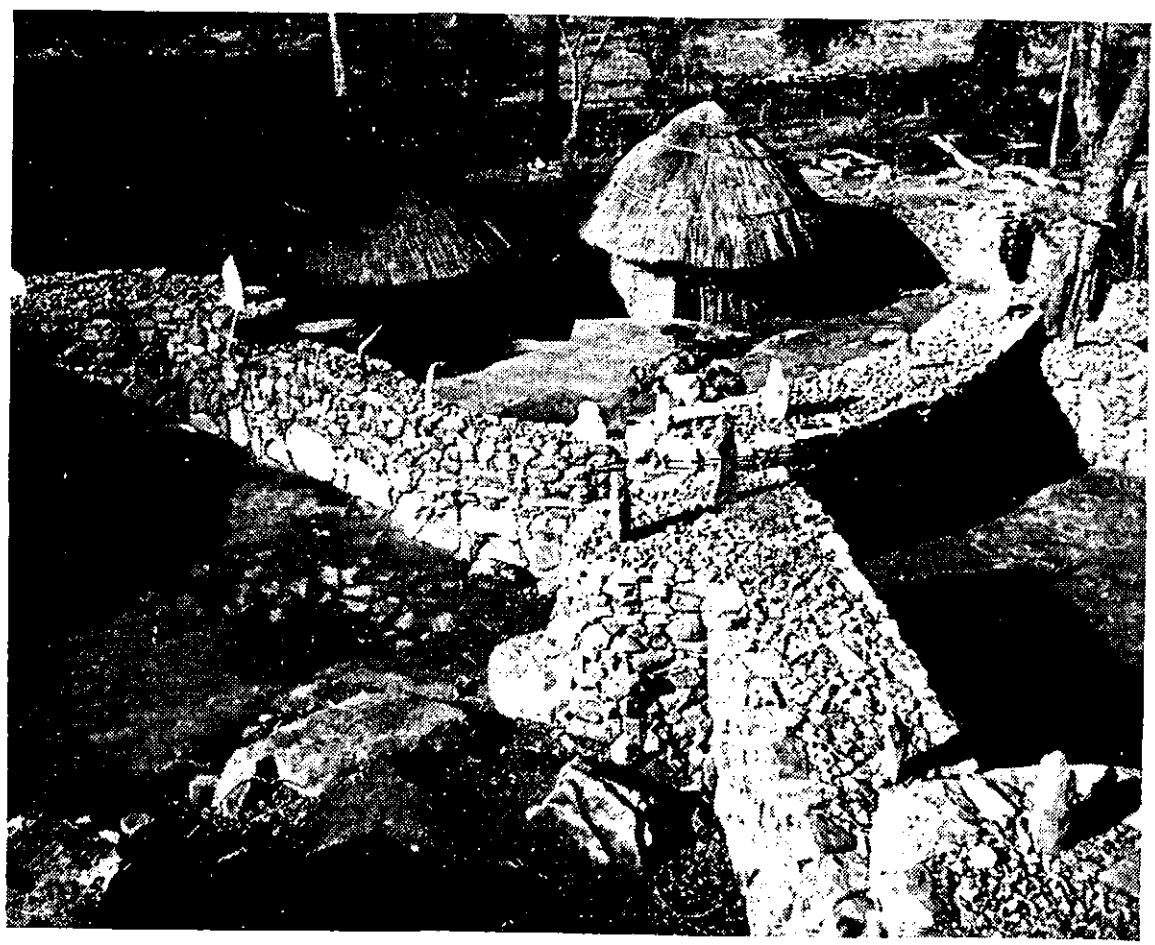

Fig. 5. Mukumbani. Chief's village with stone wall and wooden posts.

Fig. 6. Mukumbani. Wooden stockade in stone wall.

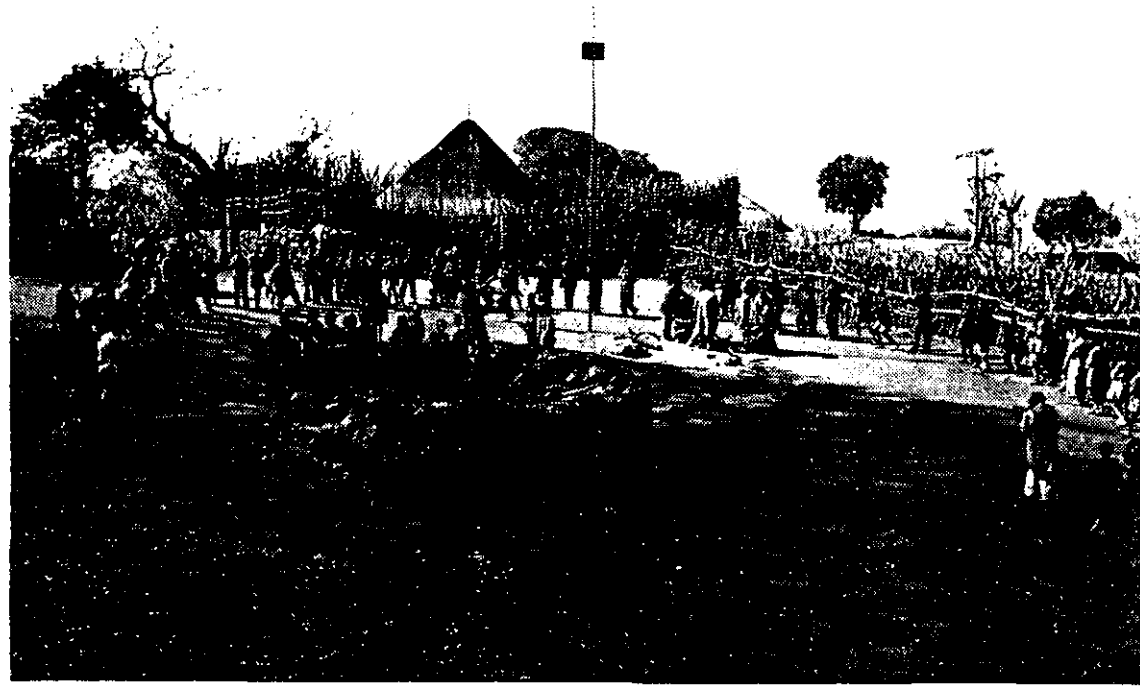

Fig. 7. Mukumbani, September 1964. Tshikona dance. Enclosing stockade in stone wall foundation and musician's stone platform.

Fig. 8. Tshimbupfe, September 1964. Men building wall at Chief's village.

Fig. 9. Clay fireplace at Tshimbupfe.

Fig. 10. Rim section of a pot from 6"-9" below surface level at Nareng Iron Age smelting site, Phalaborwa.

Fig. 11. Rim section of a pot made by Nyamukamadi, a Muvenda woman at Tshishonge, Tshimbupfe, September 1964.