

REPORT ON A VEGETATIONAL SURVEY OF THE LOWER
MKWASINE RIVER RIGHT BANK

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I arrived at Chikureve camp on January 5th, 1959, and during the next 5 days was able to study vegetation - with regard to potential tsetse habitats - upstream from the Nhushwe River to the game fence, and some way beyond.

The vegetation in the area can be divided into eight categories:

- (1) Riverine fringe
- (2) Tributary fringe
- (3) Vlei-side fringe
- (4) Acacia-Spirostachys woodland
- (5) Acacia wooded grassland
- (6) Mixed wooded grassland
- (7) Mixed woodland
- (8) Mopane woodland

Of these, the first four categories are to be cleared at present.

The riverine fringe extends along the banks of the Mkwesine river, becoming attenuated or disappearing at some points such as the confluence with the Modelela river. Transects (1) and (2) were made at the game fence on the south bank, and No. (3) on the Nyomasaka, at the confluence with the Mkwesine.

On the Mkwesine, the top storey of large trees is usually 1 or 2 trees thick, with the following species present:

Diospyros mespiliformis, ficus capensis, acacia heteracantha, Trichilia emetica and Berchemia sp. Shakwari, as yet unidentified, was also in this group.

A second storey of smaller trees may be seen on the transects including:

Spirostachys africanus, strychnos stuhlmannii, combretum imberbe, cleistochlamys kirkii, lonchocarpus capassa, acacia nigrescens and combretum transvaalense.

The third storey of low shrubs and sprawling bushes was usually present composed of:

Acacia ataxacantha, flueggea virosa, grewia spp. royena macrocalyx, euclea sp. combretum microphyllum and unidentified species such as shukutsa, chishlongwa,

on the banks. The top-storey is only one tree thick and included an acacia sp. not yet identified (Govakova), Rigelia pinnata and other species mentioned above. The 3rd storey shows a greater variety of species, mostly unidentified such as Chikuhloova, Gwaha and Likalahomba. Away from the water's edge, between the fringe proper and the mopane woodland, is a zone of deciduous trees - Terminalis prunioides, spirostachys africanus, combretum imberbe, C. transvaalense and croton megalobotrys, without any noticeable understory.

A typical tributary fringe was examined along the Nyaliwonje - the more northerly branch of the tributaries now being cleared. A top storey of large Acacia heteracantha and acacia sp. (Kalan-unger) occurs throughout.

On the lower reaches, east of the game fence many other species of smaller trees are found:

Acacia nigrescens, lonchocarpus capassa, C. imberbe,
lannea kirkii, terminalis sericea,

with clumps of low trees containing:

Spirostachys africanus, croton megalobotrys, piliostigma thoningii, cassia sp. (Petersiana), albizzia sp. and ximena sp.

Further up stream, the watercourse passes through a vlei; there are no large acacias, and the foliage ^{proper} is reduced to scattered L. capassa, A. nigrescens and T. sericea.

On the vlei margin, bordering the combretum-mopane woodland, such species as minusops zeyheri, berchemia sp. c. transvaalense and c. imberbe are found.

West of the game fence the fringe consists of the large acacias along the watercourse, with scattered c. imberbe and S. africanus clumps in the grassland bordering the stream. On the edge of the combretum-mopane woodlane, A. nigrescens occurs, as pure stands in some places.

Transect (4) was performed at a small ravine on a drainage line east of Chickuruve camp. Up and down stream of this ravine, the bordering vegetation is unchanged from the surrounding mixed woodland and mopane.

This dense fringe contains a top storey of Acacia nigrescens, kirkia acuminata, berchemia sp. lannea kirkii and S. africanus.

This last species, where growing in the stream bed, is unusually tall and straight-stemmed.

A second storey of unnamed species such as gwaha and chikuloora occurs with a third storey of several unnamed species of low shrubs. In this fringe most of the species are those found in mixed woodland on

The fringing vegetation of the Mkushwe, in the Ndanga East Reserve, was also inspected. Large trees, such as Kigelia pinnata, A. heteracantha, A. nigrescens and L. kirkii occur along the water-course with thickets of C. celastroides, C. microphyllum (?) Dalbergia melanoxylon, Cleistochlamys kirkii and unidentified species such as satima, n'zefuzefa and chipahlani.

The area east of the Mkushwe is settled and native cattle graze or browse in the mopane woodland.

If this fringe is to be cleared, the cattle will be deprived of shade trees during the dry season. This may be of importance. It is possible that the area is settled in sufficient density to discourage invasion by G. morsitans.

(3) Vlei side Fringe

Many linear vleis occur in this area, along drainage lines, usually as open grassy areas running through the mopane woodland.

In places, however, a definite fringing zone may occur, as on the vlei east of the Modelela, where the surface of the vlei is considerably lower than the ground on either side.

This zone is only one tree thick - large species such as A. heteracantha, A. nigrescens, C. imberbe, Sclerocarya caffra, with S. africanus scattered or in clumps. On the aerial photographs, darker areas may be seen alongside some vleis, in what appears to be mopane. This effect may be due to longer retention of leaves, or thicker undergrowth due to greater water availability.

(4) Acacia-Spirostachys woodland.

At the mouth of the Modela river, dense areas of woodland occur on either side of the valley, or the area of wooded grassland through which runs the stream. On the east side, at the gap in the game fence, a dense stand of S. Africanus occurs. Further into this zone, a stand of A. nigrescens with a thicket layer of dense Grewia species and C. transvaalense succeed the Spirostachys. This type of woodland is found on the north side of the stream, and also along the next vlei to the east. Bordering the zone, the trees thin out to give wooded grassland: A. nigrescens, L. capassa, P. thonningii with thickets of Grewia species, gardenia species and chishlongwa .

(5) Acacia wooded grassland

This zone was found along the Modelela River on either side of the game fence. It is a wide area of grassland with scattered specimens of A. nigrescens, A. heteracantha and C. imberbe. No clearing should be needed in this zone.

(6) Mixed wooded grassland

and a mixed woodland with K. acuminata, S. coffra, P. rotundifolius, cassia abbreviata and C. imberbe is found. A second storey of tall C. molle occurs in places, and a third layer of shrubs - grewia species, C. petersiana, Chidane and pesa is found above a fourth layer of low, unidentified plants: Mohirubwane, mutovela, munandane and kwangulatio. Many open areas occur, and in parts there are dense thickets.

This area may be a potential tsetse habitat, owing to its diversity of plant species and habit.

Manyoka hill bears a dense cover of mixed woodland. As on Chikureve, a top storey of K. acuminata and other species is found over a tall, thick second layer of C. molle.

The third and fourth layers included species found on Chikureve with others, such as P. rotundifolius, commiphora mollis, and strychnus muhlmanii (2nd layer) flueggea virosa, R. macrocalyx and the unidentified wuzeney, chikuhloora, ximenia sp. and acacia sp.

This woodland is also found on Chowa, the small hill above the confluence of the Nyaliwonje and Ndora, and in the Ndanga East Reserve, close to the cattle fence.

Here, areas of stony ground are surrounded by flat zones of scrub mopane, K. acuminata, C. molle, D. acloroxylon and albizzia spp. forming an open wooded grassland.

On the stony patches, dense thickets are found. The top storey includes C. mopane, S. saffra, L. kirkii, T. prunioides, K. acuminata, Entandophragma caudatum, C. mollis and S. Africanus.

The second storey, which is very dense contains C. molle, A. nigrescens, gardenia resiniflua, Bauhinia, Pterocarpus rotundifolius and other unidentified spp. make up the third storey.

The only other area of this vegetation was found on a dike running E - W, a mile North of the game fence crossing on the Mkwesine.

The species found were among those quoted above.

In most cases, this mixed woodland is found on rocky ground, often on steep hillsides. If it should be a potential habitat for the fly - it has sufficient density to give some shade even when leafless, and a variety of habit and shade characteristics - clearing by bulldozer would not be feasible owing to wear on the tracks. At present, Conservation and Extension operators are not allowed to work over rocky areas. Possibly, hand clearing of the second storey would suffice to make the areas inhospitable to tsetse flies.

(8) Mopane Woodland

This zone covers most of the area in the Mkwesine basin.

Small clumps of acacia species on vleis and ant hills are more difficult to identify. In some cases, dark areas on the photos are normal mopane woodland.

On my next visit, I shall locate and inspect these scattered clumps, which may be of importance.

I visited the bulldozing operations being carried out by Mr. Naude of the Department of Conservation and Extension, on two tributaries, the Ndora and the Nyalinonje. He had completed the clearing of all trees - except the big acacias and some *Trichilias*, which were being attacked with the ripper. He said that he was clearing about 1 - 1½ acres per day.

I showed him the other areas to be cleared, as marked on the map, which will be cleared ruthlessly, as decided previously.

Clearing of lower storey vegetation only would result in a great saving, but it is not known if the big acacia by themselves would provide a dry season fly habitat. Though evergreen, their crowns are high and the foliage sparse and it is possible that the shade provided would not be suitable for *G. morsitans*.

Mr. Naude will be going on leave at the end of this month, and a relief operator will take over for two months.

I have made enquiries about labourers from the Ndanga East reserve, but at this time of year, few, if any, are forthcoming.

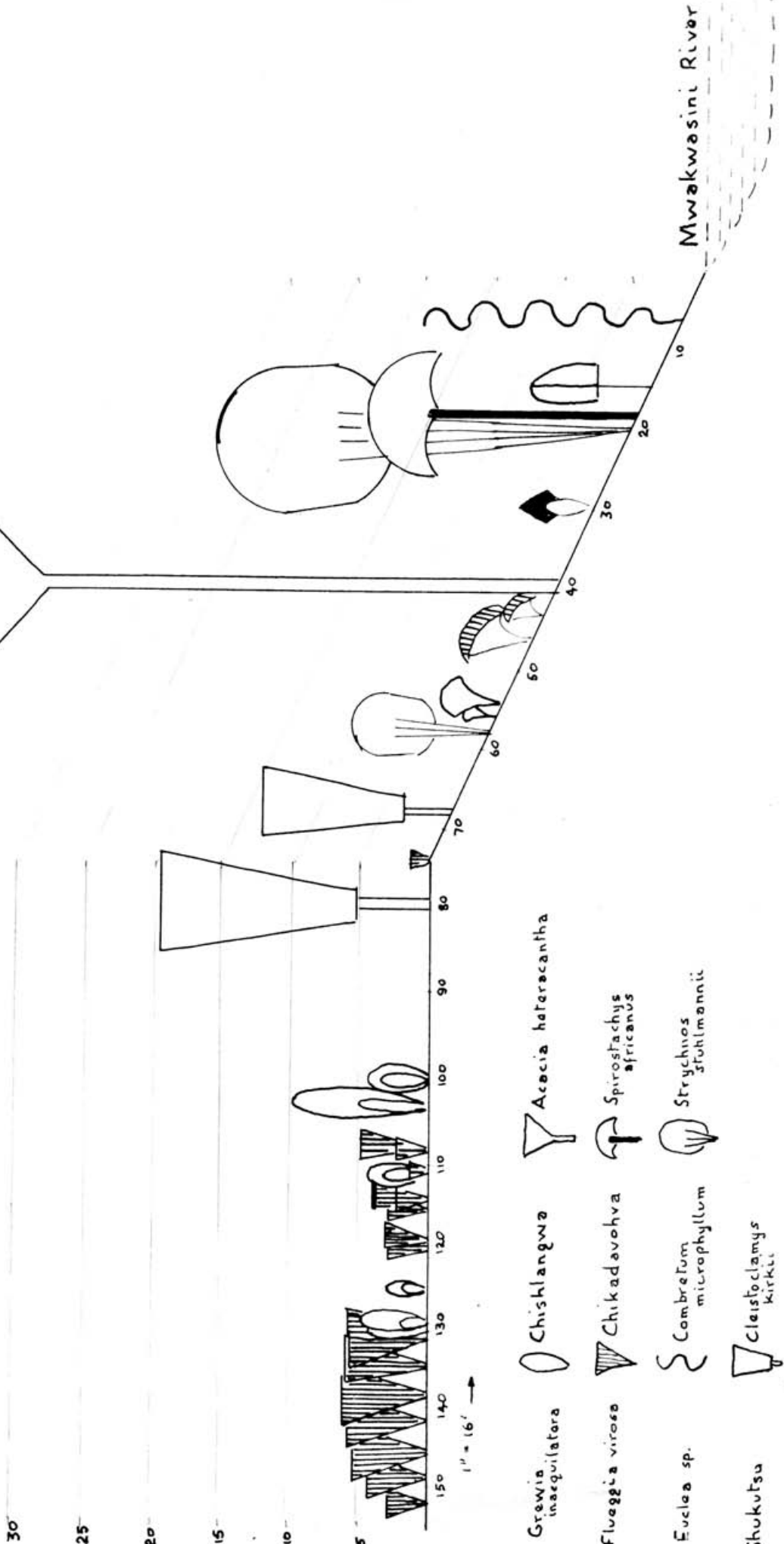
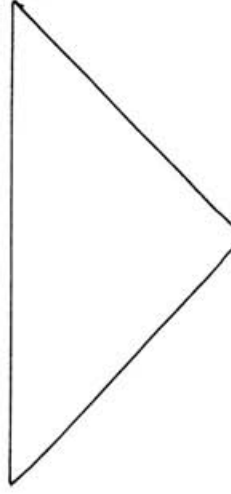
Conclusion

Clearance of fringing vegetation (zones (1) and (4) is of primary importance, and all the vegetation of this type inspected in the area appeared to be potential fly habitat, or potential avenues of advance.

Areas of mixed woodland, and scattered termite mound communities should be mapped, but it is probable that hand labour would be required for much of these areas.

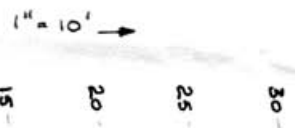
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Transect on Mwakwasini right bank. No 1 Strip 150' X 12'

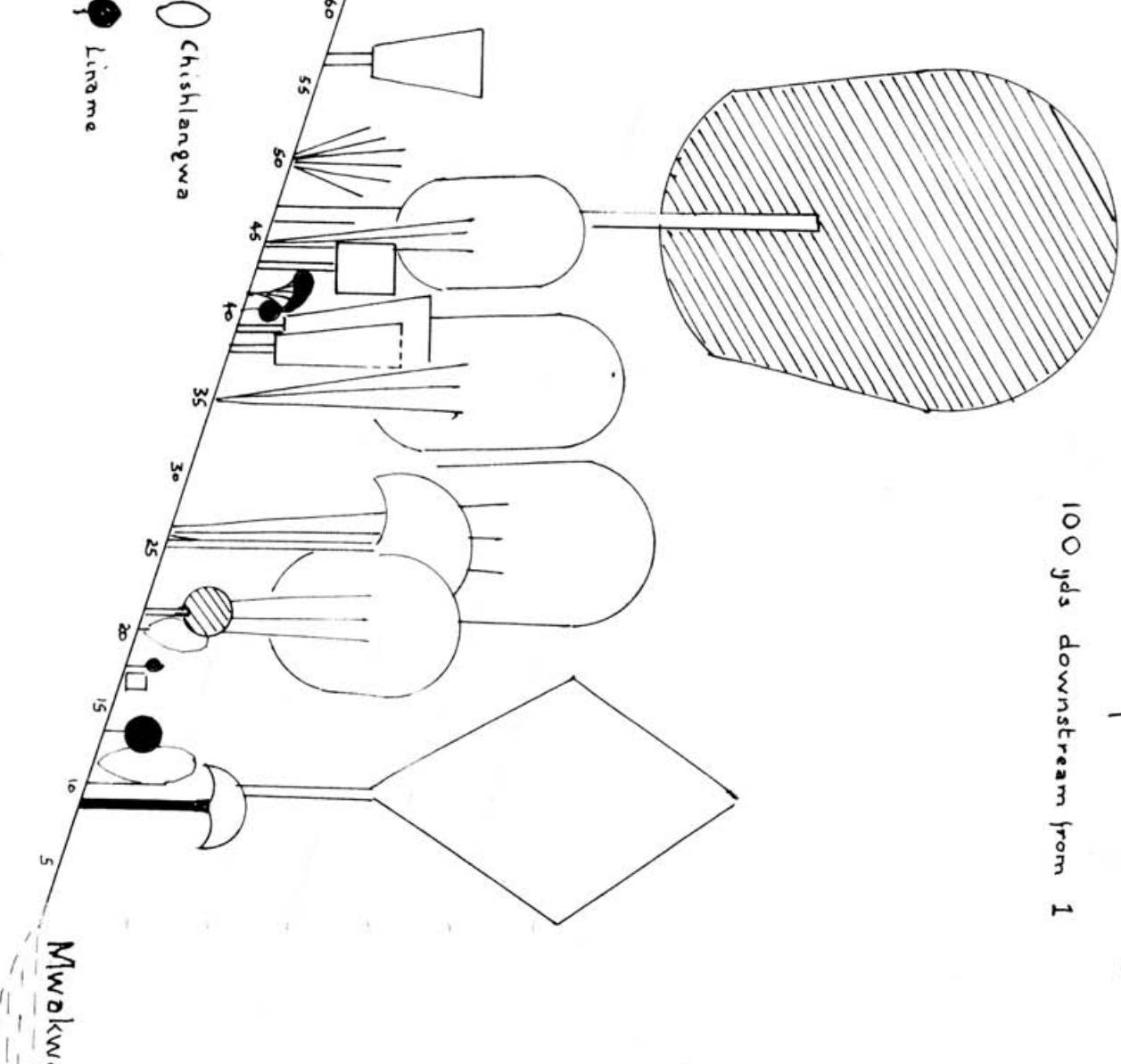


2. Transect on Mwakwasini right bank No. 2 Strip 12' X 100'

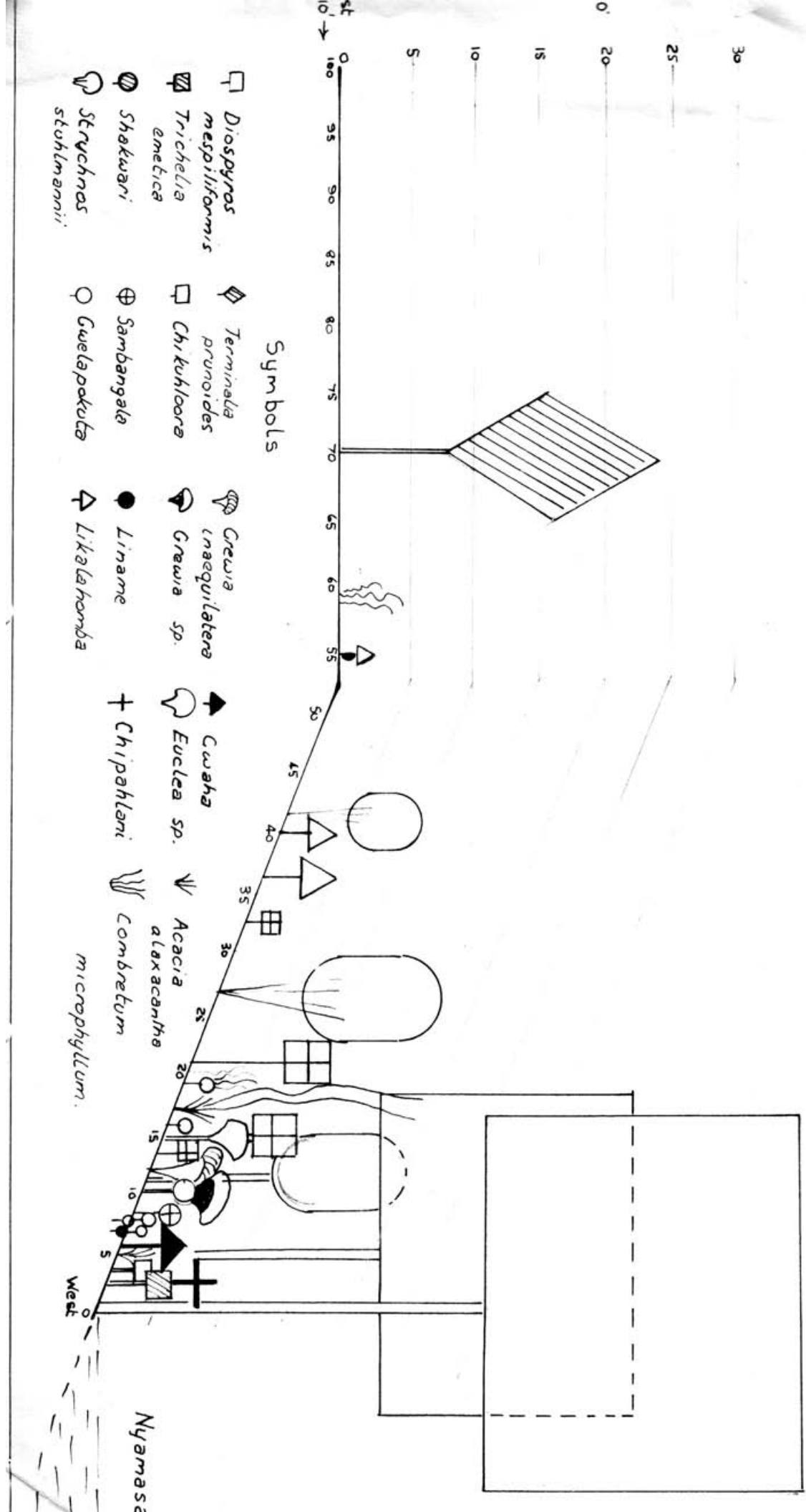
100 yds downstream from 1



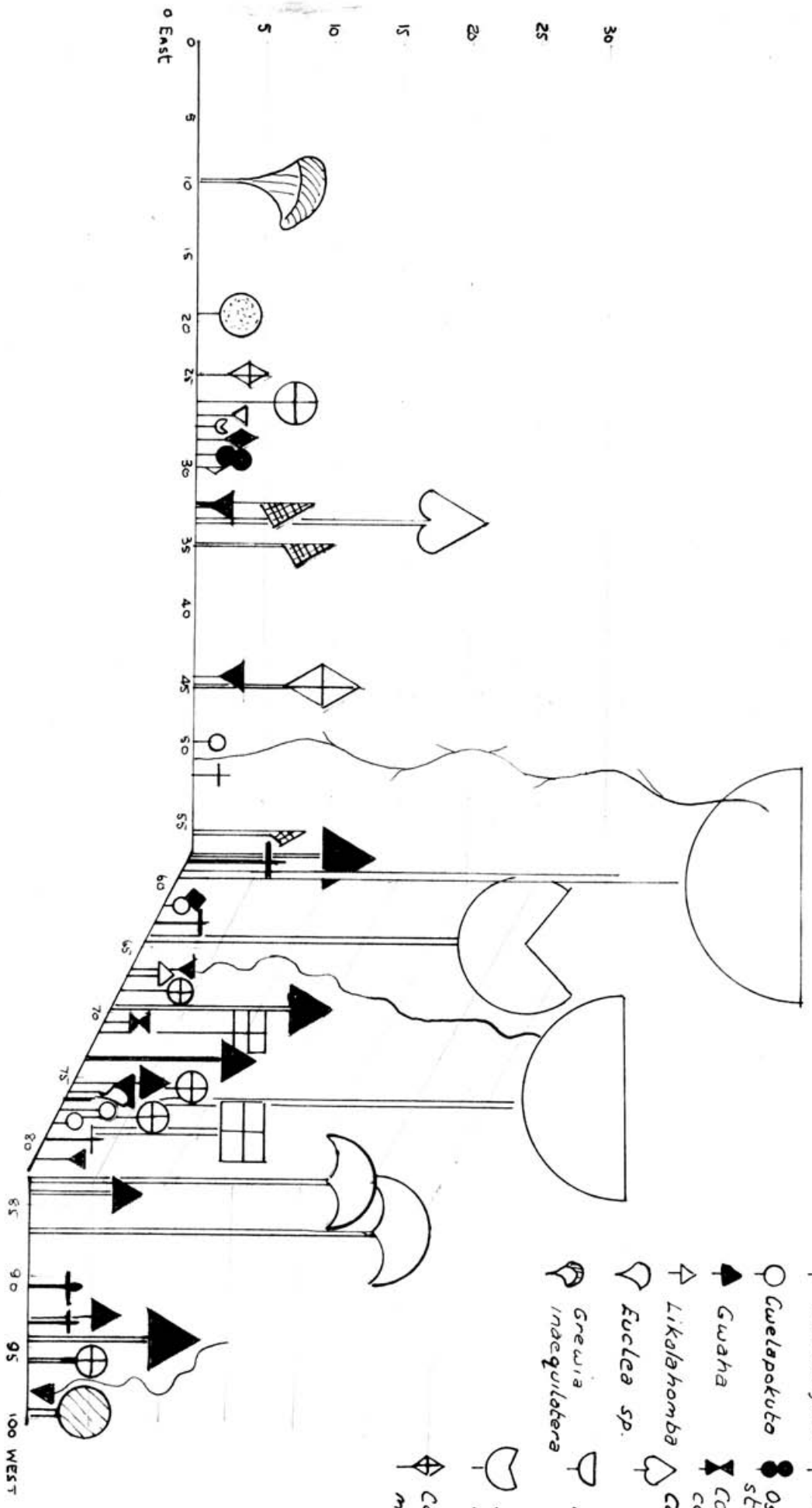
- Acacia hefferacantha
- Spirrostachys africana
- Strygos stuhlmannii
- Shakwari
- Cleistochlamys kirkit
- Diospyros maspiliformis
- Combretum imberba
- Flueggea virosa
- Grewia sp.
- Grewia sp.
- Acacia ataracantha
- Chishlangwa
- Linama



3
 Transect on Nyamasakana River at confluence with Makwasini River
 Strip 12' x 100' = 1200 m²



Transect of drainage line E of Chikurruve camp Mwakwasini right bank



Symbols

- ⊙ Shakuari
- ⊕ Chikuhloora
- ⊖ Sambonyala
- Gwelapokuto
- ▲ Gwaha
- ▽ Likalahomba
- ∇ Fuclea sp.
- ☞ Grewia
- ☞ Inaequilatera
- ☞ Barch
- ☞ Lanna
- ☞ Kirkill
- ☞ Combre molle.
- ⊕ Chippakli
- ⊖ Pesan
- ⊕ Chisin
- Ostrya struhln
- ∇ Combre celast
- ∇ Celoph mop.